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1909

Cleanings in Bee Culture

VOL. XXXVII

February 1, 1909

No. 3

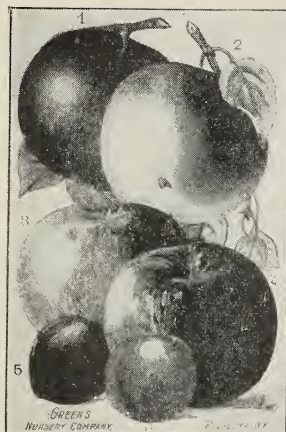


Abraham Lincoln, President of the United States, 1861 to 1865. Born in Kentucky, February 12, 1809; died a martyr to the cause of liberty, at Washington, 1865



PUBLISHED BY

THE A. I. ROOT COMPANY, MEDINA, OHIO, U. S. A.



Green's Garden Collection No. 10.

Apple and Plum Trees

TWELVE TREES FOR \$2.50

- 6 APPLE TREES:**
- | | | |
|----------------|----------------------|-----------|
| 1 Winter Rambo | 1 York Imperial | 1 Wagener |
| 1 McIntosh Red | 1 Yellow Transparent | 1 Wealthy |
- 6 PLUM TREES:**
- | | |
|------------|------------|
| 2 Burbank | 2 Lombard |
| 1 Bradshaw | 1 Red June |

All plum-trees offered in above collection are largest size. The apple-trees are two years old, 4 to 6 feet high, all packed f. o. b. cars at Rochester, N. Y.

12 Trees: Special Bargain Price \$2.50

GARDEN COLLECTION NO. 10 AND PLUM COLLECTION NO. 999, BOTH FOR \$5.00

Green's Peach Collection

FOR THE HOME GARDEN

12 Peach-trees for \$1.75



- 3 Niagara
- 3 Early Crawford
- 3 Elberta
- 1 Champion
- 1 Crawford Late
- 1 Hill's Chili

All trees offered in the above collection are strictly first-class, largest size.

12 Peach-trees; Special Bargain Price \$1.75

Green's Big Plum Collection No. 999

20 Plum-trees, 4 Rose Bushes, all for \$3.24

- 5 Burbank
- 3 Lombard
- 3 Bradshaw
- 2 Red June
- 1 Beauty of Naples
- 2 Shipper's Pride
- 2 Thanksgiving
- 2 Gueii
- 4 Live-Forever Rose Bushes



All largest-size trees, 6 to 7 feet high, f. o. b. here.

24 Trees and Bushes, all for \$3.24

ABOVE PEACH COLLECTION AND PLUM COLLECTION NO. 999, BOTH FOR \$4.75

Plum-Tree Collection No. 1

14 TREES FOR \$1.98

- | | | |
|--------------------|----------------|----------------|
| 2 Shipper's Pride | 1 Thanksgiving | 2 Gueii |
| 1 Beauty of Naples | 2 Burbank | 1 Live-Forever |
| 1 Red June | 2 Lombard | Rose Bush |

All trees largest size, 6 to 7 feet high

Also 1 McIntosh Red Hardy Winter Apple, 1 Elberta Peach; these two smaller trees.

12 Plum-trees, Special Bargain Price \$1.98

Grapevines at a Bargain

12 VINES FOR 98c

One-third off regular price. Must be sold

We offer 3 Worden, black; 3 Concord, black; 1 Campbell's Early, black; 2 Regal, red; 3 Niagara, white; all **two-year-old first-class Grapevines for 98 cents**, regular price being \$1.55.

PLUM COLLECTION NO. 1 AND THE 12-GRAPEVINE COLLECTION, BOTH FOR \$2.50

Plum Collection No. 2

6 TREES FOR 68c

- | | |
|-----------|----------------|
| 2 Burbank | 1 Thanksgiving |
| 2 Lombard | 1 Reine Claude |

All trees of medium size, 4 to 5 feet high; two years.

6 Plum-trees, Special Bargain Price 68c

Rose Collection No. 1

6 ROSE BUSHES FOR 98c

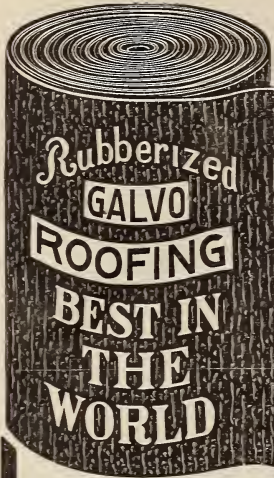
Varieties are as follows, selected for hardiness and freedom of bloom: 2 Live-Forever Pink Rose, 1 Madam Plantier, 1 Dorothy Perkins, 1 Magna Charta, 1 Crimson Rambler. All large two-year-old bushes which will bloom the coming summer. Regular price \$1.40.

Special Bargain Price . . . 98c

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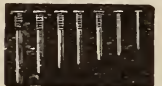
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We offer 100,000 rods of heavy galvanized fencing, either diamond mesh, like illustration, or square mesh. Fencing that is guaranteed equal to the very highest grade manufactured. We have it in all widths. It is put up regularly in 10 and 20 rod reels. Price per rod as follows: 18-in., 14¢; 20-in., 15¢. Other heights in proportion. 26-in. Poultry Fencing, 2-in. mesh, per rod, 23¢. Galvanized Barbed Wire, \$2.45 per 100 lbs. Two or four point regular galvanized Barbed Wire, put up on reels, per 100 lbs., \$2.45. Painted Barbed-Wire, per 100 lbs., \$2.25. Our Special Galvanized high-grade light-weight Barbed Wire per spool, \$1.50. Painted Twisted Wire per reel, \$2.00. Galvanized Fence Wire, \$1.50 per 100 lbs. At this price we will supply you new Galvanized Wire Shorts. They



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These Nails were on board barge sunk in the Ohio River, and are more or less rusty. They are practical for use and make a fine handy assortment. Put up mixed, just as they come, 100 lbs. to the keg. Sizes from 3 to 40 D. Per keg, \$1.60. Nails, straight sizes, just one kind to a keg, with slight



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Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

INDIANAPOLIS.—There is a very favorable demand for best grades of both comb and extracted honey; and while jobbing houses are fairly well stocked, very little honey is now being offered by producers. I note some arrivals of fancy comb at 12½; No. 1 white, 12; white-clover extracted, in five-gallon cans, 7. Some amber honey is being offered, but the demand is so slight that the prices are irregular. Beeswax is steady at 29 cents cash or 31 in exchange for merchandise.

Jan. 18.

WALTER S. POWDER, Indianapolis.

TOLLEDO.—The market on comb honey is rather quiet as usual at this season of the year. We are quoting fancy and No. 1 at 15½ to 16 cents, in a retail way. We have no other grades to offer. Extracted white clover, cans or barrels, is worth 8 to 8½; alfalfa, light amber, 7½ to 8. For beeswax we are paying 28 cts. cash or 30 in trade for first-class yellow; off grades, 2 cents less.

Jan. 21.

THE GRIGGS & NICHOLS CO., Toledo, O.

SCHENECTADY.—But very little is doing in comb honey, and prices would have to be shaded to induce sales. There is some demand for extracted in 60-lb. cans and 160-lb. kegs, especially buckwheat. We quote fancy white, 14 to 15; No. 1, 13 to 14; No. 2, 12 to 13; buckwheat, 11 to 12; extracted, light, 7 to 8; dark, 6½ to 7.

Jan. 21.

CHAS. MACCULLOCH, Schenectady, N. Y.

ZANESVILLE.—The demand for honey continues abnormally light, though indications are that stocks will be exhausted some time before the arrival of a new crop, as little or no honey is being offered. For strictly No. 1 to fancy white-clover comb, delivered here, producers would receive from the jobbing trade 13 to 14 cts.; and for best extracted, 8, which prices are higher than those prevailing elsewhere. I offer for good clean beeswax 29 cents cash or 30 in exchange for bee-supplies. Extra-fine wax would bring a little higher price.

Jan. 20.

EDMUND W. PEIRCE, Zanesville, O.

KANSAS CITY.—We quote fancy white in 24-section cases from \$2.75 to \$2.90 per case; No. 1 at \$2.75, and No. 2 at \$2.50; extracted, No. 1 white, in 60-lb. cans, at 8 cts. per lb.; amber, 7½. There has been very little trade in honey for the past two or three weeks. The market is well supplied with both comb and extracted. Beeswax, 25 to 28.

Jan. 22.

C. C. CLEMONS PRODUCE CO., Kansas City, Mo.

DENVER.—We quote strictly No. 1 white comb honey at \$3.15 per case of 24 sections; No. 1 light amber, \$3.00; No. 2, \$2.75; white extracted honey, 8½ to 9; light amber, 7½ to 8½; strained, 6½ to 7. The market is overstocked on both comb and extracted honey, and demand is light. We pay 24 cts. cash for clean yellow beeswax delivered here.

Jan. 21.

THE COLORADO HONEY PRODUCERS' ASS'N, Denver, Col.

COLUMBUS.—The demand is somewhat better, but supplies are still heavy, and further shipments are not advisable at present. We quote fancy white comb at 14; No. 1, 13; No. 2, 12; amber, very slow sale at 11.

Jan. 21.

EVANS & TURNER, Columbus, O.

CINCINNATI.—The market on comb honey is exceedingly dull. Fancy white comb honey is selling at 14. There is no demand for off grades at any price. Amber honey is selling in barrels at 6 to 6½; California sage, 9; white clover, 8 to 8½. Beeswax, slow at 33.

Jan. 21.

C. H. W. WEBER, Cincinnati, O.

NEW YORK.—The demand has fallen off considerably during the past month, and very little honey is moving. While we have some demand for No. 1 and fancy white, No. 2 white and lower grades are entirely neglected and almost impossible to sell. While our market is not overstocked, still the supply is sufficient to last for some time to come, and therefore we can not encourage shipment of any grade for some time to come. We quote No. 1 and fancy white, 13 to 14; off grades, 9 to 11, according to the quality. The demand for extracted is fair, but not up to that of former years; however, there is no overstock of this, and with a fair demand during the next few weeks the market will be fairly well cleaned up. We quote California white sage, 8½ to 9; light amber, 7 to 8; amber, 6½ to 7; white clover, 8 to 8½; dark, 6 to 7; Southern in barrels, 60 to 75 per gallon, according to the quality. Beeswax is quiet at 29 to 30.

Jan. 22.

HILDRETH & SEGELKEN, 265 Greenwich St., New York.

CHICAGO.—There is nothing especially interesting to report, different from what we said in our last. Trade on comb honey is still very unsatisfactory, and is selling in only a small way. Extracted is moving more readily. This applies mostly to white clover and basswood; and there does not seem to be a big demand for California extracted. Weather conditions for the past week or so, also, have been very unfavorable for the selling of comb honey—entirely too warm. We quote fancy white, 14; No. 1 white, 13 to 13½; No. 2 white and light amber, 11 to 12½; medium amber and buckwheat, 9 to 10½; white-clover and basswood extracted, 60-lb. cans, two cans to the case, 7½ to 8; same in barrels or half-barrels, ½ ct. per lb. less; Southern California light-amber extracted, 60-lb. cans, two cans to the case; 7 to 7½; Utah water-white alfalfa extracted, in 60-lb. cans, two cans to the case, 7½ to 8. Bright pure beeswax, 30 to 32.

Chicago, Jan. 25.

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Requirements: Honey to be produced on full sheets of extra-
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Quality: Honey must be produced from clover, basswood, or
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Combs must be even and of uniform thickness—not over one
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Will furnish frames, shipping-cases, and carriers for re-ship-
ping the honey.

Bee-keepers in Michigan or Ohio interested in this proposition,
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price wanted for the honey per pound, *net weight*, F. O. B.
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HONEY BUYER,
c-o Cleanings in Bee Culture,
Medina, Ohio.

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will be conducted the same as usual; there will be no change whatever. Soliciting your patronage, I am
Yours truly, CHAS. H. WEBER.

GLEANINGS IN BEE CULTURE

Established
1873.
Circulation
35,000.
72 pages.
Semi-
monthly.

Devoted to Bees, Honey, and Home Interests.

Published by THE A. I. ROOT Co., Medina, Ohio.
J. T. CALVERT, Business Manager.

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A Book of Valuable Information for Bee Hunters.

Tells How to Line Bees to Treas, etc.

(The following is taken from the author's introduction to *Bee Hunting*.)



Many books on sports of various kinds have been written, but outside of an occasional article but little has been written on the subject of Bee Hunting. Therefore, I have tried in this volume—Bee Hunting for Pleasure and Profit—to give a work in compact form, the product of what I have learned along this line during the forty years in nature's school-room.

Brother, if in reading these pages you find something that will be of value to you, something that will inculcate a desire for manly pastime and make your life brighter, then my aim will have been reached.

The book contains 13 chapters as follows:

- I. Bee Hunting.
- II. Early Spring Hunting.
- III. Bee Watering—How to Find Them.
- IV. Hunting Bees from Sumac.
- V. Hunting Bees from Buckwheat.
- VI. Fall Hunting.
- VII. Improved Mode of Burning.
- VIII. Facts About Line of Flight.
- IX. Baits and Scents.
- X. Cutting the Tree and Transferring.
- XI. Customs and Ownership of Wild Bees.
- XII. Benefactors and Their Inventions.
- XIII. Bee-keeping for Profit.

This book contains 80 pages, paper cover.
Price, postpaid, only 25 cents.

With GLEANINGS one year, \$1.10.

THE A. I. ROOT COMPANY, Medina, O.

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OR,

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The author says: "While the book is intended for the specialist it is none the less desirable for the plain, every-day bee-keeper, with his one home apiary, or for the amateur with his five or six colonies."

There have been so many inquiries for this book from those who are already subscribers to GLEANINGS that we repeat here our offer D2, as follows:

A Year's Work in an Out-apiary (for self)50
Six months' subscription to Gleanings (for a neighbor)25
	.75

BOTH until March 15, 1909, for *only*50

Of course, if you are not already a subscriber you may have the paper and the book both sent to you, or you may have a year's subscription to GLEANINGS and the book for one dollar.

THE A. I. ROOT COMPANY, MEDINA, OHIO

A LANGSTROTH SKETCH

As the general public never tires of new and true stories about Lincoln, so bee-keepers ever welcome any new glimpse of the life of the father of modern bee culture—L. L. Langstroth; hence it can be imagined with what pleasure the Bee-keepers' Review, in its February issue, publishes a sketch of his life as written by Jennie Brooks, who knew him intimately from her earliest childhood until she had grown to womanhood.

It contains some of the most graphic yet touchingly beautiful things that have ever been written of Langstroth; and after reading this sketch I can well understand why articles from her pen have graced the pages of Harper's and Lippincott's and other leading magazines.

Her home is now in Kansas; yet last summer she visited Oxford, Ohio, that she might make photographs of the old Langstroth

home, the old apple-orchard where once stood his apiary, and the spot where he planted his famous "honey-garden;" and the Review considers itself fortunate in being able to lay before its readers all of these interesting mementoes.

These heartfelt girlhood memories, and the pictures of the old home and its surrounding, have touched my heart regarding Langstroth in a way that it has never before been touched.

If you would like to enjoy this glimpse of Langstroth, as seen by a little girl, send ten cents for this issue, and with it will be sent two other late but different numbers, together with a four-page circular that gives some clubbing prices that are away down, down, down. The ten cents may apply on a subscription if you send one later.

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A complete treatise on the subject.

Fully illustrated

The A B C of Bee Culture

A text-book for the beginner and advanced bee-keeper

Cloth-bound, \$1.50 postpaid
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FROM THE ADVERTISING DESK.

MONEY IN POTATOES.

The Potato Implement Co., whose advertisement appears on another page, is offering to GLEANINGS readers an excellent booklet on the culture of potatoes which is well worth sending for. The information given therein is certainly valuable, being the result of many years' experience in the culture of this important crop. Secretary Wilson has recently drawn attention to the fact that this great agricultural nation does not grow enough potatoes to supply its own wants. This certainly ought not to be, and it behooves the more alert and progressive farmer to be up and doing something. You can certainly rely on the information which this booklet contains, and it is so written and worded that any intelligent farmer can understand it.

A POULTRYMAN'S DIARY.

The Geo. Ertel Co., of Quincy, Ill., is offering to the readers of GLEANINGS a diary book gotten up expressly for the use of poultry-keepers. With it there is no difficulty in keeping an account of your eggs, chicks, and items of expense; and by a simple system of book-keeping one is enabled to know just what the profits have been at the end of the year. We believe this is a good thing, and hope our readers will promptly accept the offer so generously made. Of course, this is done to advertise the incubators made by the Ertel Co., of which they make a complete line at very moderate prices; but it shows a commendable spirit of thoughtfulness and enterprise on the part of this company to get out such a book and to distribute the same free to all who send in their address accompanied by a request.

A FAMOUS SEED FIRM.

Again we have with us for another campaign the well-known seed-house of D. M. Ferry & Co., Detroit, Michigan. Probably nearly all of our readers are acquainted with the name of this firm, as it has been doing a seed business for a generation and more. This being the case, it is unnecessary for us to devote any space to an introduction. They are always well to the front with novelties, and they sell a line of good reliable seeds on which their reputation has been built. Their business extends to all parts of the United States. If you are intending to purchase seeds this spring it would be well to keep in touch with Messrs. Ferry by sending for their annual catalog, ready for use when you are making up an order.

CARRIAGES AND BUGGIES.

As usual the Elkhart Carriage and Harness Co. place their advertisement in these columns for their usual business campaign during the winter and spring months. They have done this for years to the complete satisfaction of hundreds of the readers of GLEANINGS who have bought their buggies and carriages from this old reliable concern. In fact, they are so well known to our readers generally that we do not feel that we can add to their reputation for fair dealing. We do know, however, that they have been selling buggies to our readers for something like a generation, and always with pleasant and satisfactory results; at least, so far as we can now remember there has never been a complaint of unfairness on their part received by us from any of our readers. They were one of the first concerns of the kind to undertake to sell their goods direct to consumers; and the fact that they have succeeded so well speaks volumes for their method of doing business.

THE UNITED FACTORIES CO.

This is one of the large business institutions of Cleveland, O. It is composed of a number of factories banded together for selling purposes. Their intention is to make a short cut to reach the consumer by selling direct. No two of the factories make the same goods. In this issue they advertise iron or metal roofing, felt roofing, and incubators. Evidently they think our readers are interested in these lines, and doubtless they are right. We hope our friends will write for descriptive matter and prices before sending elsewhere. This method of selling factory-made goods has much to recommend it, as the parties to the combination are large well-financed concerns which must sell goods to keep their workmen employed all the time. They are not speculators in any sense of the word, but manufacturers very anxious to deal directly with consumers. They not only save jobbers' and dealers' profits; but they can more quickly build up a reputation for their goods by appealing to the consumer direct. On the other hand, consumers should see to it that firms of this kind are duly encouraged with orders, as it is only by cutting out middlemen that the prices of goods can be reduced. Some combinations are decidedly bad; but this is one deserving of encouragement and support.

Seasonable Supplies

This is the season to buy your bee-hives. The discount pays your freight expense, and you can get them ready for the bees during the quiet winter months. We have the

**Root Dovetailed Hive
Danzenbaker Hive
Root Chaff Hive**

Each the best of its kind, and all "Root Quality." Our central location gives you the best of service with low freight charges. We want to quote you prices on the hives you will need.

*Send for catalog.
Beeswax wanted.*

M. H. Hunt & Son, Lansing, Mich.
Opposite Lake Shore Depot.

Bee Supplies

**for the Southern
States.**

WE are better prepared than ever before to take prompt care of all orders. We sell goods at factory prices and aim to keep our stocks well assorted. Write us for estimates on your list, or send the order right along and we will guarantee that you will be satisfied. We handle none but the best goods. Golden bees and queens a specialty. Send in your orders now and be sure of early delivery.

Root's goods exclusively.

HOWKINS & RUSH
241 Bull St. SAVANNAH, GA.

Field and Garden Seeds Bee and Poultry Supplies

The best quality bee-supplies. None better to be had. Now is the time to send in orders, and be ready for the rush season.

All kinds of Garden and Field Seeds. Choice sweet-clover seed always in stock. A large variety of best seeds for the South.

Bee-keepers and gardeners who also raise poultry will be interested in our large stock of poultry-supplies, the largest and most complete line in the South.

Catalogs of all of the above lines on request. Send now, and get your orders in early. .



Texas Seed and Floral Company
Dallas, Texas

For 25 Years

I have supplied Southern Beekeepers
with

HIVES and SUPPLIES

and have given satisfaction.

Root's Goods Exclusively.

Prompt and accurate service.
Catalog mailed free.

J. M. JENKINS
WETUMPKA, ALABAMA

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TEMPERANCE POST CARDS.

It is with pleasure that we again call attention to friend A. T. Cook's temperance post cards as advertised in our classified columns. Mr. Cook has made a specialty of this kind of literature, and if you are interested in temperance it would be well to correspond with him at once. Mr. C. is an old member of the GLEANINGS family.

IMPROVING THE INCUBATOR.

A man who has done much to improve the incubator is Mr. H. M. Sheer, of Quincy, Ill. He has devoted a lifetime to the study of artificial incubation, and by his inventions has done a great deal to simplify the construction and operation of the modern incubator. We do not have sufficient space at our disposal to describe and elucidate these inventions; but Mr. Sheer sends out a book free to all who apply, which amply covers the whole subject of modern improvements on the incubator. This book contains much valuable information for poultrymen. We have often alluded to the splendid catalogs issued by the manufacturers of incubators, and the one issued by Mr. S. is no exception to the rule. It forms an excellent treatise on the science of incubation and the rearing of chickens, and conveys a great deal of information on chicken culture in a very pleasant and interesting manner. Poultry-keeping is rapidly becoming a high science, and it is only by keeping in touch with all that is newest and best in the poultry world we can do it; hence we urge all our interested readers to write to Mr. Sheer, asking for a copy of his book describing his inventions. We think they will be pleasantly rewarded for their trouble.

POTATOES FROM NORTHERN MICHIGAN.

Again we print, in this issue, the annual announcement of Messrs. Darling & Beehan, the potato specialists of Northern

Michigan who are known far and wide for superior seed potatoes. Of course, locality has much to do with their phenomenal success; but they also have made a deep study of potato culture, so that any one sending there for seed is pretty sure of getting what he expects. Messrs. D. & B. are regular seedsmen, and have built up an excellent reputation in connection therewith. Many of our readers have had satisfactory relations with this firm in years gone by, and doubtless this season will witness a host of orders from GLEANINGS readers anxious to try their hardy northern-grown seeds.

HEADQUARTERS FOR HARDY TREES.

About this time of the year we always carry the advertisement of D. Hill, the evergreen specialist, who urged the planting of trees by the million many years ago, and long before the agitation for the preservation of our great forests had commenced. He has made a lifelong study of evergreen trees suitable to the hard winters of our western States, and at present lists 38 varieties as suitable. Some of these are well suited for the purpose of making windbreaks which are so essential to the comfort of men and animals on the farms. Not only so, but windbreaks shelter crops of all kinds as well as animals. On our wind-swept prairies and table lands they are doubly important, and as *nurse* trees to more delicate kinds fulfill a great mission. In Europe most of the forests were first planted in nurse-trees of some hardy evergreen species, and the reason why we are not more successful in tree-planting is that we neglect to provide the proper conditions for success by affording ample protection to the young plants. Tree-planting is a business peculiarly adapted to bee-keepers, and we hope they will take the matter up and correspond with Mr. Hill. He sells young trees cheap, and has all the necessary information for success ready to tell to all his customers.

GENERAL ADVERTISERS.

Some large general advertisers still hesitate to try GLEANINGS IN BEE CULTURE, being under the impression that it is nothing but a class magazine. The letter below, lately received from a former subscriber, contains a significant statement. His opinion, representative as it is of hundreds of expressions received by us, ought to convince any advertiser. Such subscribers are sure to be good patrons of our advertisers.

West Nashville, Tenn., Jan. 25, 1909.

The A. I. Root Company,
Medina, Ohio.

Gentlemen:--

Replying to yours of Jan. 7, with inquiry as to my reason for discontinuing Gleanings, I will say that I have the numbers of that magazine for a year and a half, and have read about one-fourth of their contents. I also have a copy of your latest A B C and X Y Z, and have not read it as much as I should; therefore I thought it best to discontinue my bee-papers for a time, any way.

My opinion of Gleanings and its publishers is the highest. I do not know of a cleaner, higher-toned periodical. In general moral tone it has most of the religious publications beaten "to a frazzle," and its genuine interest in its readers and their homes and home-life makes it more than a class or trade journal.

Assuring you that it is my intention to be again numbered among your subscribers at no very distant date,
I am

Most sincerely yours,

E. J. Adkisson.

Quality of Circulation. GLEANINGS numbers more than 35,000 subscribers, the very highest grade of readers—about one-half prosperous farmers, the other half men and women in all walks of life—all intensely interested in bee culture. This represents a very general circulation all over the country.

The Final Test. Do advertisers in GLEANINGS get results? If we had your eye and ear for five minutes we could prove to your entire satisfaction that no medium in this country, circulation considered, has as handsome a record of bona-fide results. This has been shown over and over again by the returns that have been received by many and different lines of general (as well as specially apropos) lines of business that have been and are using space. We might cite scores of cases, but have room for only a few—such as Stromberg-Carlson Telephone Co.; Kitzelman Bros.; R. M. Kellogg Co.; Darling & Beahan; Seaboard Air Line; Farm Journal; W. Atlee Burpee & Co.; Bateman Mfg. Co.; M. M. Johnson Co.

We will gladly send specific data on this matter of results to any advertiser asking for them. For any other particulars address

Advertising Dept. **GLEANINGS IN BEE CULTURE, Medina, O.**

"If goods are wanted quick, send to Pouder."
Established 1889

AS THE CROW FLIES

By the Bee Crank

When the Wright Brothers have established their Consolidated Cloudland Atmospheric Express Service they may be able to clip off a few rods from the length of the present route from you to me. It is not yet established, and they are not even likely to have it in operation before you are ready for your spring bee-supplies.

I mention this now because some of my customers are going to delay ordering until the last minute, and then find themselves in a great hurry for their goods. If you do, I shall be ready for you. But why wait? Isn't it better for you to take my catalog to-night, sit down in front of the cozy fire, look through it carefully, and check off the things you will need, and drop me a line telling me about them? If you do not want the goods at once, tell me when to ship them, and when the day comes they will be packed ready to go forward to you. This makes it easier for me, and it also relieves your mind and provides against



overlooking it during the spring rush.

I handle Root's standard goods, and sell at Root's prices. If you haven't my catalog, a card request will bring it. I should like to show you what I have in stock by way of Danzenbaker hives, metal-spaced frames, smokers, veils, and all the necessities that belong to the bee industry.

Write for quotations on finest white-clover extracted honey in five-gallon cans. I am supplying many up-to-date beekeepers with this fine honey, thus enabling them to hold their established trade. Send me your beeswax. I pay 28c cash or 30c in trade.

I am running full blast in my new building, where I have increased facilities for handling this particular line of business. In fact, I claim to possess the most perfect and complete distributing house in all the world, outside of the large factories.

Every communication sent here receives an immediate and courteous reply.

Walter S. Pouder,

859 Massachusetts Avenue, Indianapolis, Indiana

HILTON'S Strain of Bees and What They Did

Dear Friend Hilton:—The two three-frame nuclei I received of you May 21 were received in fine condition, and the red-clover queens proved themselves worthy of the name. I never saw finer or gentler bees. They were transferred to ten-frame hives and full sheets of foundation. I now have four strong colonies, with plenty of stores for winter, and have taken 195 lbs. of fine extracted honey, mostly clover. I want two more nuclei for next spring delivery, and my neighbor wants another. You may use this letter or any part of it as you choose.

Gratefully yours,
Rhinelander, Wis., Sept. 14, 1908. G. C. CHASE.

In addition to the above I have sold friend Chase about \$200 worth of ROOT GOODS, which deserve some credit for the above results—the best of every thing is none too good. ROOT'S GOODS and GLEANINGS helped. If you are not taking GLEANINGS, WHY NOT? For an order of \$10.00 before Jan. 1 I will give GLEANINGS one year; \$20.00, two years; \$30.00, three years; or you may have GLEANINGS from now to the end of 1909 for \$1.00; two years for \$1.50; three years for \$2.00. SEND FOR MY 40-PAGE CATALOG. CASH FOR BEESWAX, or will exchange goods for it.

GEO. E. HILTON
FREMONT, MICH.

WESTERN PENNSYLVANIA, WEST VIRGINIA,
and EASTERN OHIO

BEE-KEEPERS

You can get any thing you want for bees, at
STAPLER'S SEED STORE
412-414 Ferry St., PITTSBURG, PA.
Agents for Root's goods.

VIRGINIA BEE-KEEPERS

Get new stock and finest goods by ordering your supplies at once.
Danzonbaker hives a specialty. Price list on application.
W. E. TRIBBETT, STAUNTON, VIRGINIA

IMPROVED DAN-ZE GUARANTEED 'ALL RIGHT'

GOLD MEDALS

St. Louis - 1904
Jamestown - 1907



IS THE BEST,
STRONGEST,
COOLEST,
CLEANEST,
CHEAPEST,
and LARGEST
SMOKER SOLD
FOR A DOLLAR.

With the side grate combines hot and cold blast deflecting part of the air back and over the fuel: COOLS as it expels the smoke, while part fans the side and bottom till all consumed. The Double-walled case, 3½ inches in diameter, has asbestos-lined sides and bottom, keeping all cool.

The projecting hinge-strap protects the smoke exit, and renders easy opening the one-piece cap.

THE VALVELESS metal-bound bellows combines simplicity, utility, and durability.

Five years increasing sales justify us in extending our GUARANTEE of PERSONAL RESPONSIBILITY for full satisfaction or REFUND of price on all our smokers sold by US OR OTHERS.

Price, \$1.00; two, \$1.60; mail 25c each extra.

DAN-ZE HIVES with metal Propolis-proof Guards.
ROOT'S Goods at Root's prices, early-order discounts.
Write us for any thing you need. Free circulars for yourself and your friends.

If you want a home in this genial Sunny South Land, we will help you find it.

F. Danzenbaker, Norfolk, Va., or Medina, Ohio

W.H. Laws is again on hand with his famous stock of bees and queens for the season of 1909.

Fine well-bred queens are his specialty; and in all the queens mailed during the past 18 years there is not a displeased customer that I know of. On the other hand, letters of praise come from every source. Mr. Wm. Hughes, of Washington, D. C., writes that he has been handling queens for the past twenty years, and he has never found any that equal or please him so well as the two dozen he bought of me last season. I can and do mail queens every month in the year, California and Cuba taking over 100 in the past month of December. I will mail queens from now on at the one price of \$1.00 each or 6 for \$5.00. Breeding queens, each, \$5.00. Write for prices on quantity lots. Address
W. H. LAWS, Beeville, Bee County, Texas.

Oldest Bee-paper in America

This Coupon Worth 35 cents

(New Subscribers Only)

Name

Postoffice

State

cents (stamps or coin) together with this coupon, we will send you a trial trip of our Journal for 12 months. Order now and let us begin with this month's fine number.

American Bee Journal, 118 West Jackson, Chicago, Illinois

If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

AMERICAN BEE JOURNAL

A 32-page illustrated 75-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keepers. Best writers.

It Will Increase Your Honey-Money

If you will send us your name and address with 40

Now in its 48th Year

New Goods for 1909



Good News for the Southwestern Bee-keeper

The strenuous season of 1908 left our stock of bee-supplies in a depleted condition. We have now replenished our stock with large shipments of the finest bee-goods ever seen in the Southwest. These are

Root's Goods Exclusively

We have not dared to experiment with any other line of bee-supplies; and from the looks of our new goods we shall never need to. They are "as fine as silk." We should be glad if our customers would come and see them. You will be pleased with the best ever. Come along and enjoy a day in San Antonio, picking out what you want while your wife goes shopping. Seeing is believing, and we would far rather hear you puff our goods than do it ourselves. But we honestly believe we have not only the largest line of bee-supplies in Texas, but also, by far, the best in quality.

Shipping-cases for Comb Honey.

500	12	4	3 and 2 in. glass.	350	6¼	3	2 and 3 in glass.
350	10	4	2-in. "	550	7½	4	3-in. "
200	12	2	2-in. "	250	7½	3	3-in. "
200	16	2	2-in. "	300	9¼	4	3-in. "
250	8	3	2-in. "	50	9¼	3	3-in. "

If you can use any of the cases in the foregoing list we will quote very attractive prices to clean them up. Please write at once if you want any.

Early-order discount—2 per cent for February.

Beeswax Wanted.

We are in fine shape to use large supplies of beeswax. Bee-keepers in Texas, Mexico, New Mexico, Arizona, Oklahoma, and Louisiana should bear this in mind. In our foundation department we have a force of expert workmen who thoroughly understand their work. In working the beeswax they are careful to retain the original fragrant odor of the hive. It takes skill and care to do this, but we do it. If you desire your beeswax worked up in this way send it here. We buy wax outright for cash, and we also do considerable trading for bee-supplies.

Toepperwein & Mayfield
1322 South Flores St.
San Antonio, Texas

Write to us
your wants.

Catalog
free.

A GOOD INVESTMENT.

You can make no better investment than to take the discounts I am offering on bee-keepers' supplies. These discounts will diminish as the season advances; so the earlier you send in your order the better the investment. You can not afford to miss this special offer. Send in the list of the goods you want and get my net prices by letter.

My stock of Root goods is the largest and most complete carried in the West, and with carloads continually being added I am in position to meet every want of the bee-keeper, with promptness and satisfaction.

Write to-day for new prices and catalog.

JOS. NYSEWANDER,
565-7 W. 7th St. Des Moines, Iowa

PATENTS 25 YEARS' PRACTICE.
CHARLES J. WILLIAMSON,
Second Nat'l Bank Bldg., WASHINGTON, D. C.
Patent Practice in Patent Office and Courts. Patent Counsel of The A. I. Root Co.

Mr. Bee-Man:

I have a full line of Hives, Supers, Sections, Foundation—in fact, every thing you need in the apiary. If you do not have a catalog, send for one to-day.

182 **H. H. JEPSON** Boston,
Friend St. Phone Haymarket 1489-1 Mass.

You can save time, worry, and money by ordering your supplies for next season now.

NEW STOCK

We have a stock of goods now on hand for next season, and would like very much to receive your orders for supplies. We take pleasure in shipping orders and try our best to please every one.

Each order has our very best attention. Can you not make out an order and send to us? Over \$15,000 worth of supplies are now here awaiting your needs.

At this time of the year we would be especially pleased to hear from you. During January we allow three per cent discount.

THE A. I. ROOT CO.
SYRACUSE NEW YORK

HEADQUARTERS FOR **ROOT'S BEE-KEEPERS' SUPPLIES**

at Root's prices.—No drayage charges.

We offer for a short time,

Omega CREAM SEPARATORS

for spot cash, freight prepaid to your station, as follows:

No. 1—capacity 325 lbs., \$50. No. 3—capacity 500 lbs., \$60.
No. 2—capacity 400 lbs., \$55. No. 4—capacity 700 lbs., \$70.

RAWLINGS IMPLEMENT CO.,
9-11 W. Pratt St. Baltimore, Md.

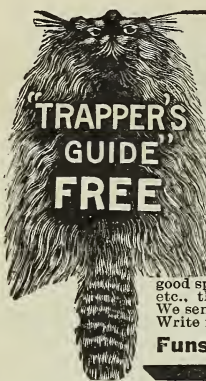
ESTABLISHED 1884

ARE YOU NEEDING SUPPLIES?

Do not fail to write us for catalog and terms. February discount, 2 per cent, besides some low prices on odd stock not much called for, but may just suit your wants.

We keep in stock Root Co.'s perfect goods, "the standard." We equalize freight rates with St. Louis and Kansas City points on all shipments of 100 lbs. and over. Send us your inquiries early.

JOHN NEBEL & SON SUPPLY COMPANY
MONTGOMERY COUNTY HIGH HILL, MO.



**'TRAPPER'S
GUIDE'
FREE**

Cash For Skins

You get the highest prices and the quickest returns when you ship your furs to Funsten. Coon, mink, skunk, muskrat, marten, fox, wolf, lynx and other furs are valuable. We receive and sell more furs direct from trapping sections than any house in the world. The biggest American and foreign buyers are represented at our daily sales, which run from \$25,000.00 to \$50,000.00 a day. The fierce competition among buyers at our big sales enables us to get higher prices than anyone else. That's why we can send you the most money for your furs, and send it quicker.

Big Money in Trapping

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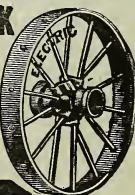
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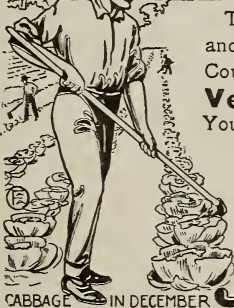
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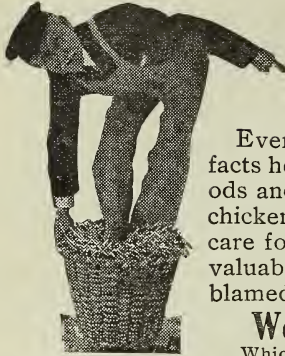
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Published by The A. I. Root Co., Medina, Ohio

H. H. ROOT, Assistant Editor.
A. I. ROOT, Editor Home Department.

E. R. ROOT, Editor.

A. L. BOYDEN, Advertising Manager.
J. T. CALVERT, Business Manager.

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

VOL. XXXVII

FEBRUARY 1, 1909

NO. 3

EDITORIAL

By E. R. Root.

ENCOURAGING RAINS IN CALIFORNIA.

DURING the latter part of the season, conditions were any thing but favorable for honey in California. There has been unprecedentedly cold weather and drouths. While the former, perhaps, would not have made very much difference with the yield from the sages, the latter would. We just received word from Mr. M. H. Mendleson, at Ventura, dated Jan. 11, to the effect that conditions in his vicinity have greatly improved on account of splendid rains, and these rains had continued clear up to the time of his writing. Already it has done, he says, a lot of good, and bees are breeding up fast.

"WE LOVE HIM FOR THE ENEMIES HE HAS MADE."

The big corporate interests are still after Dr. Wiley's scalp. The fact is, that gentleman can not be coerced, scared, nor bought. For years he has been a thorn in the flesh of some of those food concerns that have been putting out cheap whiskies, and adulterations, or poisonous preservatives in foods to keep them from spoiling. This servant of the people, according to their program, must be disgraced and put out of office. The crowd that has been using benzoate of soda, a poison which they use to preserve certain foods that are not up to the standard, are particularly bitter in their attack. If Wiley wins out it will mean the loss of thousands of dollars to them, but a probable saving of the lives of thousands of innocent children as well as some adults. Every one should write to the Secretary of Agriculture, Washington, D. C., and to the President of the United States, asking that Dr. Wiley be retained. While we have no idea that he will lose his position or standing with the powers that be, it is proper that the Secretary of Agriculture and the President should know that the best people of this country are back of him—and of them too, for that matter.

Dr. Wiley's opposition appears to be backed by organization and millions of capital, and, as a matter of course, they are leaving no stone unturned to accomplish his undoing. Fortunately, we have some of the great journals like *The American Grocer*, *The Louisiana Planter and Sugar Manufacturer*, and *The New York Times* standing up for him; but the people should make themselves heard also.

We note with pleasure that the New York State Wholesale Grocers' Association, that met on the 12th of last month in New York city,

adopted some ringing resolutions indorsing him as a "man of unassailable honesty," and "one of the chief champions of pure food."

OUTDOOR-WINTERED COLONIES UNDER SEALED GLASS COVERS; SEALED COVERS VS.

ABSORBENTS.

WE are again making a series of observations relative to the condition of colonies in chaff hives, said hives having a large sheet of glass set in putty over the tops of the frames, thus making an hermetic sealing. It will be remembered we made some observations of this kind about ten years ago when sealed covers were up.

The arrangement makes it very easy to note the position, size, and condition of the cluster of bees on different days by simply removing the telescope cap, together with the tray containing packing material which rests down on the glass.

The colonies under glass are doing nicely, and the clusters are healthy so far as can be seen. As heretofore, we find the clusters mainly near the front of the hive over the entrance. Nine times out of ten this will be the position of the bees during the fore part of winter, and they remain there until the stores are consumed, necessitating a change to the center or rear of the hive.

The glass covers show just how the moisture is disposed. Near the outside edges and around the corners moisture in the form of sweat will be found; and as it collects in the form of drops it trickles down the sides of the hive; and as all hives slant toward the front, the water will run out at the entrance. When we have absorbing cushions this same moisture goes up into them making them damp. In this condition during extremely cold weather the cushions freeze. A damp cushion or one frozen is a bad thing next to and on top of the bees.

PROGNOSTICATING A HONEY FLOW.

THE article by Mr. Virgil Weaver, in this issue, on how to prognosticate a flow of honey from white clover, contains much food for thought. We shall be glad to have our readers go over it carefully, and see if the theory put forth by our correspondent tallies with the facts in their localities. If Mr. Weaver is right* it may be necessary for some bee-keepers next summer to adopt migratory bee-keeping—that is, find pastures new. Some of our most successful beemen have done that and are still doing it. For example, Mr. W. Z. Hutchinson, of the *Beekeepers' Review*, finds that not all the raspberry bushes in Northern Michigan have been burned.

* It will be noted that Mr. G. M. Doolittle, who is known as a close and accurate observer, in his article in this issue apparently does not agree with Mr. Weaver.

Near two of their yards there are some patches that probably will give them their usual crop. In localities where the berries have been burned he will move to the alsike regions. Then, as he properly remarks, no one knows what the willow-herb will do two or three years hence.

It is important that every producer study his locality, and, if possible, ascertain whether he will have a crop another season. It is Mr. W. L. Coggs, of Groton, N. Y., who Mr. S. A. Niver reported used to shin up basswood-trees early in the season to study the condition of the buds in order to gain from them some idea as to whether there would be a crop from basswood or not.

BEE-CELLARS; WHEN A LARGE AMOUNT OF VENTILATION IS REQUIRED.

This year we have only 14 colonies in the cellar, where formerly we had as many as 200 to 250. The temperature runs considerably above 60, and yet the bees are wintering finely. When we had a large number of colonies in this same cellar, the bees became very uneasy until we put in a tin pipe connecting the outdoor air with this inner cellar. There was so great a difference in temperature that there was a good circulation, and so long as fresh air kept pouring into the beeroom they would keep quiet, providing the temperature did not go too high.

It is true that one *can* winter bees in a repository with but little ventilation — that is to say, with the cellar closed up tight; but such wintering is possible only when the temperature is kept uniformly at 45, or at least not varying more than one or two degrees. In such condition the bees go into a state of semi-hibernation, when respiration is very low. When the temperature goes higher than 50 or 60, there must be an abundance of fresh air.

Just as we have been learning that air from outdoors will cure consumptives, and make sick people well, we are also learning that fresh air for the healthy makes them more vigorous in mind and body. What is good for man is also good for bees; and why not? Even in the poultry world it has been discovered that fresh air is a very important factor for the chick as well as the mature hen. So, then, if the temperature of your winter repository is variable see that there is suitable ventilation.

WINTERING BEES IN A WARM ROOM.

ON page 1489, Dec. 15, we referred to the fact that we had a colony of bees in one of our offices, stationed up in front of the window, having an entrance channelway from the hive to the sill on the outside. It will be remembered that Mr. G. W. Phillips, one of our former employees, wintered successfully two years in succession, a colony of bees in this way in his college study room, where a fairly uniform living temperature was maintained throughout the winter. He found that the bees not only wintered well, but reared brood, and actually increased in strength.

The results of the experiment thus far in our office are highly satisfactory. The colony is raising a lot of good brood, and fresh-laid eggs are found in some frames. Young bees are hatching out, and the colony seems to be prospering very much as any colony should in May

or June, notwithstanding it is too cold for the bees to fly. Every two or three weeks there has been at least one good day when the bees could get an airing. The temperature in the office is kept at about 68, and does not vary very much throughout the winter.

If this colony should continue to do as well, we shall seriously consider putting up a house-apiary, the same kept warm by steam. Each colony will have an entrance outdoors, and the covers will be sealed down. "But, hold on," some of our readers will say; "A. I. Root tried that over thirty years ago, and it proved to be a failure." Yes, we admit that; but he had nothing but a common kerosene-stove in order that he might have a uniform temperature. Over the tops of the frames he had nothing but quilts loosely placed. It is presumable that the air in the room was fouled by the lamp, causing uneasiness on the part of the bees. But where steam heat is used, the air will not be affected, and, besides, every colony will be shut in, deriving its supply of air from outdoors.

Just suppose that this plan should prove to be a success. One could have tremendously strong colonies early in the spring. While brood-rearing would necessarily consume the stores, yet the trade of syrup or honey for young bees would be a good one.

There really seems to be no reason why a colony or colonies having entrances leading outdoors, with the hives inside kept at a temperature of 70 degrees, should not give good results. One would naturally suppose that the warm air surrounding the hive during mid-winter would force the bees out; but, strangely enough, the bees from our indoor hive never fly out except when the bees in the chaff hives in the large apiary come out.

The sides of the hives in the office are of glass, and it is a pleasure to see those healthy bees lying almost dormant, but spread out over the frames as if it were summer.

This is an experiment that any one can try, and we suggest that our readers try it and report results.

SHIPPING HONEY IN CARLOADS ON SIGHT DRAFT WITH BILL OF LADING ATTACHED; SOME OF THE TROUBLES OF THE SHIPPER AND CONSIGNEE.

THROUGH the various correspondence that has been going on through this office for the last five or six years, it is increasingly apparent that the plan of sending a carload of honey, freight, c. o. d., is far from satisfactory. Time and time again we are called on to arbitrate differences between shipper and consignee. It happens in most cases that the former is not the producer, but a middleman who has bought up various lots of honey — enough to make up a carload, and then puts it on the market. The honey is sold at a stipulated price, freight c. o. d., that is, the bill of lading with sight draft attached is sent to some bank in the town of the consignee for collection. The latter is allowed the privilege of examining the car before unloading; and if it is not satisfactory he may refuse it.

So far the deal looks simple and fair to both parties; but, unfortunately, it does not work out so beautifully in practice in many cases. If the con-

signee lives in a city, the opportunity for inspection is very limited. He may not have the car side-tracked, possibly, for several days. He can not very well get at it except in a big freight-yard, where there are hundreds of other cars closely set in together; and even when he gets into the car there is but very little opportunity for him to look over the contents. The fact of the matter is, even in large or small towns the honey can not very well be looked over without removing the entire shipment; and that, of course, means acceptance; and even when removed, he finds the front cases of comb honey sometimes faced with the best goods, leaving the inferior out of sight. Such examination as the consignee may make in a car fails to a great extent to give an idea of the contents of the entire shipment, and right here is where the jangle comes. The shipper retorts to the complaint of the consignee something in this way: "The honey was shipped to you with the privilege of examination before paying the draft. The fact that you accepted it and paid the draft entitles you to no consideration. If it is not up to specification you should not have accepted it."

The consignee has very little redress in law if the shipper is not disposed to arbitrate. He has the whip hand and the law* on his side, and he can do just as he pleases about making any allowance for short weight, for improper grading, or badly filled or off-colored sections.

The great trouble with this sight-draft bill-of-lading manner of doing business is that it begets carelessness, not to say dishonesty, on the part of the middleman who makes up the shipment, because he knows that the consignee will have very little chance to examine the goods. If, further, he puts the poorest down in the bottom or in the back end of the car, and the best goods near the door, he has the consignee at a great disadvantage, for the latter may assume that the first run will hold up clear through the car, accept the shipment, and pay the draft. The result is a nice little row; threats to show up the other fellow through the journals; lawsuits, etc.

We know of no reason why carloads of honey could not be shipped to a *responsible* house, and paid for in ten days, like all other goods. This puts a check on the shipper; and if the house is responsible, and has a reputation for fair dealing, a producer or middleman who collects the shipment runs very little risk in getting his pay. He will see to it that the honey is up to representation clear through the car. If it is not, the consignee can well afford to pay the expense of the shipper to come and examine the goods and the two appoint a referee to settle the difference.

It may be said, however, on this kind of deal, that some of the commission houses that are not honest would take advantage of the fellow at the other end of the line. Perhaps; but a little inquiry will usually reveal who can be trusted. Shippers would do better to deal only with known and responsible houses rather than to be attracted by glittering high prices from an unknown concern.

It would seem to us that a possible solution of the whole difficulty, perhaps, would be, in the case of unknown firms, to ship the honey freight

c. o. d., but instruct the bank that the goods are to be unloaded and examined thoroughly before the draft is paid. It might take a week's time to go through the shipment. In case the honey is not accepted, the shipper should be notified by wire, and either be asked to come on and take charge of the goods or instruct some other house to take them.

There are two other objections to the general plan in vogue of sight draft with the privilege of inspection. If consignee rejects the car, the shipper must immediately find another buyer. Perhaps he can do it at once, but more often he can not, in which case demurrage will be charged up to him. Suppose it is cold weather; then the honey in the mean time suffers irreparable damages. Suppose the car is bumped into by another car and the honey broken. The railroad company is responsible; but it is not an easy matter to prove and collect for damages. On the other hand, if the consignee is allowed to unload the car, the points of difference between the parties to the sale can be settled while the honey is in safety.

The real seat of the whole trouble, after all, is carelessness in grading, or, perhaps, we had better say, in some cases dishonest grading. If the goods are carefully packed, and up to standard as to weight and for each grade, there will be no trouble, even on the present basis. Such a policy is bound to be a winner in the end; for more cars can be sold at the same place, and probably at higher figures, than the other fellows who are known to fall below the grades called for.

We have had so many complaints in the last few years of these carload shipments that we feel tempted at times to give all the facts, with the names of the parties to the deals, and let the bee-keeping public judge for itself. A little airing is a good thing sometimes, and we may be obliged, for the good of the fraternity at large, to open things up. But we much prefer not to do so if matters can be adjusted between the parties.

A POINTER TO THOSE BUYING QUEENS.

WE have been having some correspondence with Mr. G. C. Greiner, one of the writers of *GLEANINGS*, regarding queens for next year. We sent him one lot of queens from a choice breeder which proved to be satisfactory; but the second lot did not come up to the first by considerable. After some little investigation it developed that the latter were from another breeder. We then stated that the breeder of the first lot had died, but that we had a few of her tested daughters which we would sell for \$5.00 apiece. But he replied by saying he would much prefer to pay \$30.00, the amount he has appropriated, for 30 untested queens from an extra-choice breeder than for six extra-select queens from that same breeder at \$5.00 each. His argument was this: That out of the 30 untested he could himself select at least five or six queens that would be the equal of our \$5.00 queens; and, besides, have all the others, two dozen, ranging in valuation from \$2.00 to \$3.00. No, it did not pay him to buy high-priced queens; but he thinks it is a good practice to lay in a good stock of choice untested queens from a fine breeder, and Mr. Greiner is right.

* We showed this to our attorney since the above was written; and he says if the consignee can show that the shipper misrepresented the grading or weights he can recover, even though he did accept the car.

STRAY STRAWS

DR. C. C. MILLER

CARLY W. REES, p. 63, ought to try shaking the bees in front of the hive after moving that short distance. I have considerable faith in shaking for that purpose. [Good suggestion, and it will work too.—ED.]

A. I. ROOT used to have honey peddled from a vegetable-wagon. Joseph Tinsley, *Irish Bee Journal*, p. 76, gets a milk-seller to sell honey. The milk-wagon has the advantage that it goes every day in the year. [Good suggestion!—ED.]

FRANK C. PELLET, you're all right about feeding below in winter when the cluster is down enough. I've done some feeding that way, but I used comb honey. But are you not a little off in your second sentence, page 59? You prefer a pan of syrup on top to any of the feeders on the market, because "there is less danger from robbing than from an entrance feeder." Are all the feeders on the market entrance feeders? Can a pan of syrup on top be any safer from robbers than a Miller feeder?

R. C. AIKIN's articles are thought-provoking, and that one on page 61 is no exception. I think there is more money in comb honey than extracted for me, else I would extract. But I seriously question that under general conditions as much comb as extracted can be obtained. I'm not sure but I'll say *under any conditions*. If as much comb can be obtained, please give us an instance of a single case where, other things being equal, 25 or 50 colonies gave as much comb as an equal number, side by side, gave of extracted.

DON'T GO CRAZY in too much of a hurry about shaking bees. That it makes them tame as kittens is valuable; also that it makes them stay put when moved. But neither of these things proves that shaken bees store more honey. I don't say they don't, but satisfactory proof is yet lacking. [No, we would not get "crazy;" but somebody must have enough enthusiasm to try out the thing, whether there is any thing in it or not. We positively know that it is a great help in bringing about the safe introduction of queens.—ED.]

R. GOELDI, *Schweiz. Bztg.*, 176, reports this: Drones were hatched out in a super over an excluder, and, of course, had never flown. One evening he took the super back of the apiary and took off the cover. Promptly the drones sailed out, circled about, and went straight to the hive from which they had been taken. He counts this proof of the sharp sense of smell of the drones. A skeptic at my elbow suggests that from the super also flew workers which knew their old location, went to it, and started a call at the entrance, and the drones followed them. [Quite right.—ED.]

DON'T ANY of you beginners look at that picture on page 60 and conclude you'll go to using box hives for fancy comb honey. If Mr. Spickler had used a movable-frame hive he would have gotten just as many and as good sections, and his bees would be in better shape for the future. Neither should you decide to have four swarms together. To get 76 sections from *each* of those

early swarms, if hived separately, would be nothing remarkable. [Beginners are not likely to be misled by the picture. It is interesting to show, however, what even poor conditions can produce.—ED.]

HERE'S WHAT we need: One or more stations where all the stock is such that pure fertilization is certain; also parcels post. Then you can send a virgin in a fertilizing-cage with $\frac{1}{2}$ lb. of bees and $\frac{1}{2}$ lb. or more of candy, and have her returned a laying queen. Visionary? Well, that's just what they have in Switzerland. [Half-pound packages of bees will be sold extensively next year. Any thing under 3 lbs will go as cheaply as by mail from California to Maine. Half-pound and one-pound packages of bees weigh respectively $2\frac{1}{2}$ and 3 lbs. It follows, then, that the express charges from Medina to San Francisco, for instance, on a half-pound or a pound package of bees will be only 68 cts., and that is figuring the express on bees at $1\frac{1}{2}$ times the ordinary rates. The express for 300 miles would be correspondingly less, or about 50 cts. Apparently, then, we do not have to wait for parcels post.—ED.]

HONEY sold at 15 cents costs 5 cents for drayage, freight, leakage, and commission, p. 65. I should like to see a concrete itemized statement for that. I think that 5 cents ought to be cut in two unless the amount sent be very small or the distance very great. [At a meeting of the Northwestern Association, held at Chicago some fifteen years ago, a certain man named Dr. C. C. Miller was present, and also ye editor. The question was asked, if comb honey sold in the open market at 15 cents what would be the net price the producer ought to get on an average? As nearly as we remember, the figures stood 10 cents to the producer if the honey brought 15 cents. It is up to you, doctor, to show the figures, for you are the fellow who helped make them. Let us examine some of the items: There is freight, commission, cartage, leakage, storage, shortage, and, on large amounts, insurance; and in the case of some commission houses, dishonesty.—ED.]

EXTRACTED HONEY "can be kept indefinitely," says R. C. Aikin, p. 62. That's orthodox; we all say it; but there may be no harm in sticking a question-mark after it. See what Wesley Foster says, p. 21. Now if honey deteriorates like that, so as to lose all of its honey flavor, and become only a sticky syrup when kept in a comb, is there not *some* deterioration when kept in a can? [Mr. Aikin's statement is a little strong. While honey will keep a number of years, and still retain its character, if not overheated, yet there is apt to be a slight deterioration, both in flavor and color after the sixth or seventh year. Just the other day we found a sample of mountain-sage honey that was put up by A. I. Root in 1885. It was laid aside and was not discovered until a few days ago. The honey was not candied in the least; but it had turned to the color of ordinary buckwheat. We did not test it for its flavor, for the amount was small, and we knew that the Bureau of Chemistry would be glad to get it providing it had not been tampered with by any human tongue to change its character.—ED.]

CONVERSATIONS WITH DOOLITTLE

ABOUT THE CLOVERS.

"Mr. Doolittle, will you please tell what you know of the drouth and winter-killing of the clovers? I see so many different opinions expressed in GLEANINGS that I do not feel it should be left there; for in the part of York State in which I live we are almost entirely dependent on the clover for our crop of honey. As you live on about the same degree of latitude that I do, your knowledge in this matter would be of help to me. If the drouth has killed the clover, then my honey crop must be a failure till the clover gets a foot-hold again."

On page 1487, Dr. Miller says, "No rain fell from August 11 till Sept. 27—47 days," and he further adds that an examination of his pasture revealed an "abundance of young clover," even after such a prolonged drouth. We hardly had rain enough to lay the dust in our public highways from Aug. 1 to Nov. 1, or for 102 days, and yet our clover, where not killed by too short pasturage, seemed as lively as ever when winter set in. I have never, in all my experience, known of clover being killed by drouth. The roots go to a depth of from a foot to twenty inches in the soil, so are able to stand all the drouth we ever have in this section of the country. I was quite sure of this before this fall; but when some of our most noted agriculturists went into print with the statement that we had all better hold on to all the old hay we had, because the drouth was killing, or likely to kill, all of our meadows, I took especial pains to watch the results. Even the timothy and June grasses are mostly alive, so that a favorable spring will bring us out in good shape. Therefore I think the questioner need have no fears for his crop of honey from clover, if the season from now to blooming time is as good as the average, unless the farmers of his section are so careless of their best interests as to "pasture their land to death." Dr. Miller found the conditions in his horse-pasture much the same as we find them here, where horses, young stock, and especially sheep, are kept too near the starving-point on pastures and meadows during the latter part of the drouth.

Dr. Miller seems to question the statement, p. 1426, that "what kills the clovers is not drouth but too much water in the ground, and hard freezing, resulting in what we farmers generally call *winter-killing*," and well may he question such an assertion. But the doctor is nearly as far out of the way, since he thinks that "it isn't so much freezing that hurts as thawing." But he gets very close to the matter in the next few words where he puts the blame on *rapid* freezing and thawing. But under certain conditions, rapid freezing and thawing have no bad effect on clover, as will be explained further on.

I have been a close observer regarding this matter for forty years, or ever since I began keeping bees, and every observation showed the same cause for the winter-killing of the clovers. They *heave out*. Now, what is meant by "heaving out"? With the ground full of water it becomes very soft, and thence "puddles" itself close around the crown and upper part of the tap-root of the

clover-plant. Now it begins to freeze, and in doing so the crown and top of the root are gripped by the expansion of this puddle until they are held as in an iron grasp. As the freezing also lifts the soil by its expansion, the clover root is stretched as the process goes on; but as there is a little elasticity to the roots, this first freezing does no harm, even if the continued cold causes the ground to be frozen one, two, three, or four feet deep, as is sometimes the case on some of our exposed land. Whenever there comes a thaw after this first freezing, no harm comes to the clover by its freezing again afterward, no matter how often, *so long as there remains an inch or more of frozen ground underneath*; but if the thaw is continued until all the frost goes out of the ground, when it comes to freeze again the crown and root are again gripped at the top; and as the stretch has already been taken out of the roots by the first freeze (the soil about them having become loosened through this freezing), they are now lifted by the upper expansion of the soil, and thus the whole plant is materially injured by being lifted upward. Another thaw comes; the puddled soil settles; again it freezes, with another grip about the top of the root, and again the plant is lifted. If this continues long enough, either during winter or early spring, the plants are lifted little by little during each change of the temperature that goes below the freezing-point, till the whole of the plant, roots and all, lies prone on top of the ground. Whole fields are then winter-killed, if all of these fields have soil of like heaving nature. All clay, clay loam, muck loam, and such like soils, are called "heaving" soils, because, when they become saturated with water, they incline more or less to become soft and run together like thin cream; and as each freezing and thawing tends to fine the soil, the more freezing and thawing there is, the tighter the grip of each succeeding freeze, and the greater the lift each time. Sandy or porous soils do not tend to puddle any more than any soil would when dry, and the clovers are little injured on porous soils during winter, or on any soil which is dry, or where the frost, after having entered the soil, holds sway until the final thawing in the spring. It is the continued freezing and thawing, at any time of the year, after the first hard frost has gone out of the ground, that winter-kills the clovers on heavy land.

If the roots are raised only very slightly—from one-fourth inch to one-fourth their length—then they are injured to a certain extent, but not so much but that they will nearly or quite recover, if there is a wet spring, so the drawn roots can catch hold of the soil again. But with a dry spring, following a heaving winter, the most of the clovers on heavy land are winter-killed, whether drawn quite out of the soil or not.

I hope that this discussion may give a little help to those who have not understood the winter-killing of clover.

Alfalfa roots so deeply that it is a very rare thing that frost ever enters the ground deep enough to disturb the lower part of the roots; and the root, being so strong that it rarely breaks off through the pulling process, is able to stand and thrive on soils where the other clovers can not survive except during a very favorable winter.

GLEANINGS FROM OUR EXCHANGES

By W. K. MORRISON

MORE PREJUDICE.

The *Gaceta Apícola de España* is quite angry, and with good reason, for the chief of the rural police at Castellon de la Plana has just promulgated a decree forbidding the keeping of apiaries within the territory under his jurisdiction. Our Spanish contemporary does not mince his words, and characterizes the decree as stupid. He says it excites his compassion on account of the supine ignorance displayed by one who ought to know better; but he is also indignant at the slur cast on bee-keeping as an industry, more particularly as bees are recognized elsewhere as very beneficial in agriculture.

LEVULOSE IN HONEY.

A correspondent in the republic of San Domingo asks me the question, "How shall we get the levulose out of honey?" The easiest way known to me is to store the honey in a cool chamber to granulate. Then slowly warm it in a can having a perforated bottom. When it begins to melt, the levulose runs first, leaving the mass of honey sugar behind in the can. It appeals to me very strongly, however, that tropical bee-keepers can dispose of their honey to better advantage. Honey-bread is very salable; and as half of it by weight is honey, quite a lot can be disposed of in this way. I think most of it is made by means of ammonia and not by yeast. Honey-bread is very healthful, and good for persons suffering from indigestion. It has the merit of keeping sweet and palatable for months without any special protection. It ought to sell anywhere. In New York it is sold at 25 cents a loaf, and it is worth that.

BENZOATE OF SODA TO BE BARRED; THE EFFECT OF THIS DECISION ON SYRUPS AND GLUCOSE.

On reliable advice it is stated the United States Department of Agriculture will shortly issue a ruling absolutely prohibiting the use of benzoate of soda as a preservative of food. Of course, this applies only to interstate commerce; but the probabilities are that all the States having pure-food laws will follow suit soon afterward. This will have the effect of stopping the sale of a lot of inferior preparations of catsup, fruit-butters, jellies, jams, and syrups. It will injure the sale of glucose, as the latter is much used in connection with these manufactures.

Such a decision will greatly encourage legitimate manufacturers who produce a line of such goods in which only first-class materials are used—that is to say, good ripe fruit and granulated sugar. To say the least, this decision will have far-reaching effects. It will probably be signed by all the members of Roosevelt's board of experts, who, from independent experiments made by themselves, have decided to support Dr. Wiley in every particular so far as relates to benzoate of soda in food.

MORE ALFALFA HONEY; MORE ALFALFA TERRITORY.

The Colorado people are determined on supplying us with more alfalfa honey. By an overwhelming vote of 74,052 to 30, the settlers living under ditch on the proposed Uncompahgre project, which contains the famous Gunnison tunnel, have decided to tax themselves an additional \$10.00 per acre so as to furnish money to complete the tunnel (now two-thirds built). The original estimate of the cost of the whole project was set down by the government engineers at \$25.00 an acre; but this estimate has proved too low. The increased cost of material and labor, together with the extraordinary difficulties involved in constructing a large tunnel six miles long through a spur of the Rockies has caused this change. The tunnel will be concreted on all sides, yet it will cost only \$3,500,000. It takes clear grit and great common sense to vote like that. On these great United States projects there will be no landlordism. No renting of farms will be permitted. These enterprises are the glory of our age.

LOWERING THE TARIFF ON UNREFINED SUGAR.

At the present moment a desperate struggle is going on between opposing factions in the sugar industry. The sugar trust is fighting for a low tariff, more particularly on *unrefined* sugar. The reason is not far to seek, for the trust men own or control immense plantations in Cuba and Porto Rico. The present tariff was framed to suit their wants, and a 20-per-cent rebate was allowed on Cuban sugar, practically all of which was clear profit for the sugar combine. They do this by controlling all the refineries; and as the tariff is *high* on refined and *low* on unrefined, they absolutely control the sale of all foreign sugar coming into this country.

The United States consumes 3,000,000 tons of sugar a year. Of this, 1,250,000 will come from Cuba, 250,000 from Porto Rico, 400,000 from Hawaii, and probably 300,000 from the Philippines. The rest will come from the beet-sugar districts in the West, and in Louisiana and Texas, where cane is grown. With a little encouragement *we can grow all our own sugar with consummate ease*. Southwest Texas can produce, without trouble, 1,000,000 tons of cane sugar per annum, and Louisiana and Florida probably an equal amount. The beet-sugar States can take care of the rest. No increase in the price of sugar is necessary; but the tariff must be levied to suit the sugar-planter, not the sugar trust. Whatever influence bee-keepers possess will naturally be placed with the men who *grow* the sugar, and it may be very good policy for bee-keepers to line up and help their fellows in Louisiana and the West. The growing of beets in the West has been a great factor in building up the country, but the industry is merely in its infancy. It can be made a giant. Cuba can readily make good the loss of the sugar trade by growing bananas, pineapples, avocados, mangoes, and similar crops, which give much larger returns than sugar, and build up a superior civilization.

When it comes to levying a duty on honey and beeswax the bee-keepers will be glad to have the assistance of the sugar-producers.

BEE-KEEPING AMONG THE ROCKIES.

By WESLEY FOSTER.

COMB HONEY IN GLASS.

The method of putting up bulk comb honey in glass, shown on page 28, Jan. 1, should never be practiced where honey granulates at all easily.

One preserving company in Denver has been bottling honey with a piece of comb inserted, and it was very pretty when first put out, but is now nearly all candied solid. On the bottles is this label: "Should this honey granulate, place bottle in hot water till liquid." The piece of comb of course will melt, and form a mass of wax on the top of the honey whenever this is done, and will likely cause both grocer and consumer to feel as if they had been sold a gold brick.

SORTING COMB HONEY.

If not already done, now is the time to re-sort all unsold comb honey. One is almost certain to find some which is candied, and this should be taken out, as well as any that shows any signs of granulation whatever. The combs that are candied solid can be cut out and rendered, and all the partly candied sold for just what they are.

The best place to do this sorting is before a good-sized window, so the combs can be held up to let the light shine through if it will. The edges of the comb next to the wood usually show the first signs of candying.

Dec. 26 I went over sixty cases of comb honey and found five of them candied or partly candied.

When selling honey to the home grocer it pays to go over his stock occasionally and exchange any which is candied. There is often a great loss of trade resulting from selling a good customer a section of candied honey. The grocer should know how to detect any slightly candied section honey.

SIXTY-POUND CANS NOT STRONG ENOUGH.

Mr. Scholl is right, page 1493, Dec. 15. The 60-lb. honey-cans are too light. They should be made of heavier tin. I have seen a can burst when the case was dropped only a few inches, and in handling two or three hundred cases weighing 135 lbs. each, one is apt to work with the least effort possible, and often let a case bump the ground too hard. Cans made of heavier material can be secured, but they cost ten or fifteen per cent more.

Second-hand cans should not be used for shipping long distances, as they burst much easier than new cans.

The cases also, in many instances, are too light, and are made of very poor material. A case should weigh fifteen pounds, and have a center partition-board between the two cans. The great percentage of broken cases is due to the splitting of the end board, allowing the sides to spread. I have had an end split while the case was in my arms, and the cans fall out of the case before I could set it down.

Freight-handlers use hooks in moving pieces, and they strike these hooks into the hand-hole, often breaking through the thin wood wall and

piercing the can itself. The hand-hole should be done away with, and a cleat, say an inch thick and two inches wide, nailed at the top, and also one at the bottom at each end of the case. The cover should extend over the cleats and be nailed to them. These four cleats would save the ends from splitting, and would make it even possible for the end boards to be made of two pieces. The two cleats at the top would also give a far better grip for the hands than the hand-holes.

IRRIGATION, ALFALFA, AND HONEY.

I have read from time to time the reports of new irrigation projects in the west by Mr. W. K. Morrison. There are several points relative to irrigation and bee culture in the West and Rocky Mountain region which he has not brought out—if he is familiar with the facts. On page 22, Jan. 1, Mr. Morrison refers to the Garden City pumping project of Kansas. Kansas raises alfalfa, some with irrigation and some without; but alfalfa honey in paying quantities has never become common. The same thing is true of Nebraska. From North Platte to Kearney are great fields of alfalfa, but bees do very little there. Alfalfa raised by means of irrigation, and lacking the soil and climatic conditions, does *not* furnish nectar. The mountain valleys and slopes, both east and west of the continental divide, yield the most continuously. When more than one hundred miles away from the mountains the crops are very risky.

Another thing, a new irrigation district is not profitable to the bee-keeper for several years. The first year after water is to be had, alfalfa is not sown. The next year there may be some, but it does not bloom, and the third year is the earliest to expect any nectar from that source, and then it will be small. Five to ten years more will be required for sweet clover to get in and line the ditch banks and waste places, thus putting on the finishing touches to a location.

In this connection there is one other point which is of vital interest to Rocky Mountain bee-keepers. There are alfalfa districts such as that surrounding Ft. Morgan, Colo., where good yields of honey were the rule ten years ago and now, though alfalfa is still grown, the bees do not make the surplus that they did in former years, and most of the bees are for sale. The lower part of the Arkansas Valley in Colorado is another district where this is the case. A good many things enter in to bring about this effect. First, the plowing of the land for sugar beets, though alfalfa is still grown very plentifully, and is the best soil-renewer. Second, the farmers may cut the alfalfa sooner than formerly. Third, insect pests increase where the opportunity for life is greater. The yellow butterfly, or one almost yellow, works on the alfalfa, and undoubtedly gets considerable nectar. Then the mite, which causes the onion blight, is credited with getting into the alfalfa bloom and making the nectar-fountains dry up. The fourth element entering in is the loss by the soil of the elements which aid the plant to secrete nectar. The luxurious growth and heavy nectar secretion seem to go together, and alfalfa is not now making the rank growth in several sections of Colorado that it did ten or fifteen years ago, and the yields of honey are not equal to those of former times.

NOTES FROM CANADA.

By R. F. HOLTERMANN.

That telescope excelsior cover, page 57, pleases me. I use a telescope cover, and like it.

DUTY ON BEESWAX.

If bee-keepers used more wax than they produce, more than they produce at a profit, then higher duties would injure them. If the manufacturers use a large quantity of beeswax which the bee-keeper supplies, then a duty should benefit the bee-keeper financially. My private opinion for years, based in part on feeding, has been that the cost of producing wax is greatly overestimated. A bee brought up to the condition of wax secretion, and then kept at it under proper conditions as to temperature, etc., could be made to produce wax at a good profit with wax at 30 cts. per lb.

Bee-keepers would also gain much by a more frequent change of the combs in the brood-chamber.

Where disease is likely to occur, a more frequent change of combs should help much to combat these conditions; and on that ground alone, to encourage this added protection would be well worth considering.

MOVING BEES.

On page 18 Dr. Miller refers to various statements that have been made to the effect that bees gain by being moved. There are probably few if any men on this continent who have made more moves with bees than I have. Last season alone, as nearly as I can figure it, I moved four car loads, four boat loads, and nearly fifty team loads of bees. My experience convinces me that, if bees are moved carefully, and extreme excitement is prevented by ventilation and watering, they benefit by a move, because they uncap stores; but this can be accomplished with much less trouble and expense right at home. If bees are not very carefully prepared and treated when moving they may get excited, become thirsty, and utilize the food which has been given to the larvæ, thus destroying them. This, of course, is a very serious setback to a colony. When the tongues of the bees are pushed through the screen, and moved about in an excited way—*give them water*.

MOVING BEES IN WINTER.

The above subject, page 17, Jan. 1, has exercised many, and I feel particularly interested in the subject at the present time. My first experience in moving bees in cold weather was in the late autumn of 1901. I then bought a lot of bees in New York, and had them moved about two miles to the station by means of teams. The car, during winter weather, was two days on the way, and upon arrival in Brantford it was winter weather with snow. The bees were hauled on sleighs about a mile, placed without a flight in winter quarters, in a first-class cellar. They came through in excellent order with the exception of one which starved, and there was no sign of dysentery. The bees had clover honey for stores, and some of them were on pretty close rations.

In another instance I bought 35 colonies, which were hauled by wagon over 20 miles to the beecellar here (this cellar is illustrated in the A B C and X Y Z of Bee Culture). They reached the cellar in the evening, and, not wishing to disturb unnecessarily 483 colonies already in the cellar, I left the 35 outside until next morning, when they were taken down. I will report how they winter. They were brought here Dec. 31, and at this date, Jan. 11, after careful examination with a candle, in no respect can I see any difference between these and the other bees. The bees of the one lot were as tightly clustered, and as oblivious to candle light, as those of the other.

THE MARITIME BEE-KEEPERS' ASSOCIATION

The Maritime Bee-keepers' Association, the leading officers of which are portrayed on another page, is an organization which is making a determined effort to place bee-keeping on a better footing in these provinces. It wishes to encourage in any one a desire to engage in the industry if the person is so situated that he is likely to succeed. All the officers are men of weight and influence, and they come in contact with the public in connection with the offices which they hold.

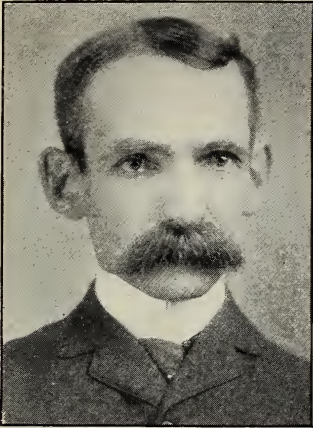
All the members of the association get GLEANINGS, and for the benefit of these and others it might be well to point out that frequently the bees store honey, in the fall of the year, from aster, and, so far as I can judge from statements I have heard made in Michigan, Pennsylvania, New York, and Ontario, the bees are liable to winter badly on such stores. Under such circumstances it is advisable either to put into the brood-chamber combs of sugar syrup previously fed, or to give the bees a 15 to 20 lb. feed of syrup made in the proportion of 2½ parts of granulated sugar to 1 of water. Feed after a frost has come to destroy practically all blossoms. Bad wintering appears to be a common experience with Maritime bee-keepers.

The quality of the honey exhibited at the annual fair was the best I have seen there during my three years' experience as judge and lecturer. Mr. Baker, the secretary, had a particularly fine display of honey, including very choice comb. Others had extracted honey which would pass in Ontario as of first-class quality.

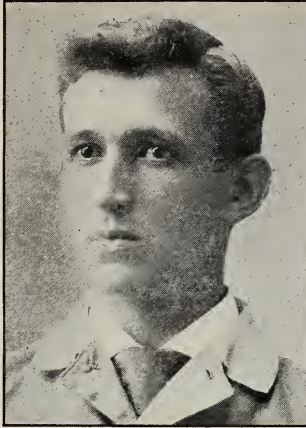
The exhibitors were: B. W. Baker; Craig Bros., W. B. Wallace, Miss Julia A. Corbett, and Chas. Pierce.

At this show Mr. Wallace had some comb honey. It was not white, neither was it amber, but rather a very light ochre color. He described a plant, which we decided was *hardhack*, as the source. After taking a section home and cutting it I detected the hardhack aroma. Two other members of the family, independently, did the same. This honey has an excellent body, a fair color, and is more aromatic than any other Canadian honey I ever tasted. In fact, I would have put it down as a tropical honey.

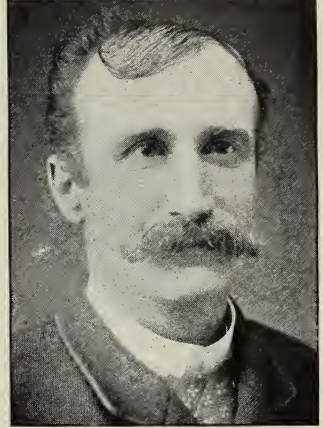
Rev. A. E. Burke, Alberton, P. E. Island, has been of material assistance in helping bee-keepers in organization. At the evening address on "Bees, Their Modern Management and the Value of Honey as a Food," there were over 2000 people present. The Halifax papers estimated the audience at 3000.



INGLIS C. CRAIG,
President.



R. DONALDSON,
Vice-President.



R. W. BAKER,
Secretary and Treasurer.

OFFICERS OF THE MARITIME BEE-KEEPERS' ASSOCIATION, N. S., CANADA.

See "Notes from Canada" in this issue.

A BOTANY OF HONEY FLOWERS.

BY GRANT STANLEY.

One of the foremost questions a beginner is likely to ask is, "When shall I put on supers?" and he is generally told to do so when he sees the first white-clover bloom. I hardly think this is always a definite reply to the question. The beginner may not have any white clover in his locality, or his bees may possibly need the supers somewhat in advance of the white-clover bloom. We also notice inquiries as to the source of certain pollen or honey the bees are gathering. We see so many questions asked along similar lines that I have often wondered why some one has not undertaken the task of writing a book on the subject of flowers which are visited by the honey-bees. We have many books devoted to bees and honey production, but not a single volume has come to my notice on honey flowers. A book devoted to such flowers, and properly arranged, would be of fully as much value to the bee-keeper as one treating on bees and honey. In fact, the two belong together. Such a work would certainly be indispensable to the beginner. He could find out just what flowers to look for in his locality; tell when they bloom, and whether they yield honey or pollen. He could also ascertain what kind of soil the various plants prefer, and whether to look for them along the roadside, or in field or forest. He could also find the name of a flower from the illustration shown in the book, and any other information that would likely be of interest to bee-keepers.

Such a work would be of great value to the bee-keeper desiring to move into a new locality or another State, as he could find out in advance just what plants abound in the new locality. The book should contain every possible known honeyey and pollen producing plant in America. It should be durably bound, and of convenient size to carry in the pocket.

THE EFFECT OF THE NATIONAL PURE-FOOD LAW ON PRICES OF HONEY.

Just about the time of the passage of the pure-food law, the editors of the various bee-journals were extolling the merits of such a law so strongly that I thought if only a portion of what was being mentioned should turn out a reality, it would certainly be a great boon for bee-keepers everywhere. The editor of GLEANINGS seemed to be in the lead in making reference to the value of such a law. Scarcely an issue of the journal came out without more or less reference being made as to what we could expect or hope for should the bill pass. After watching the result since the passage of this bill, I must confess that it has done even more than was predicted. It has worked wonders for bee-keepers, and will do a great deal more. There is no doubt whatever that it is the greatest law in the history of this country, enacted in the interest of bee-keeping. Since the passage of this bill, honey has been steadily advancing in price, and the demand for it the past season was greater than I have ever seen it before. I notice that the merchants are eager to buy in almost any quantity, and they do not hesitate to pay an advanced price over that of former years. They seem to have much more confidence in honey than formerly, and upon inquiry as to whether the consumer had any suspicion as to adulteration since the passage of the law one merchant remarked that this had nearly disappeared. I was also told there was an increasing demand for honey since the passage of the law. The passage of this bill has done more to remove the suspicion of adulteration in honey than years of advertising. Since the law became effective we scarcely hear any thing mentioned relative to adulteration. The passage of the law has been the means of placing honey in the very top notch of food luxuries. It has a market all its own, and has no competition, and this is just as it should be.

Now that we have such a law, it is the duty of



Mr. Stewart is a fresh-air advocate; he sleeps beneath an apricot-tree, opposite his office and study.

CONTRA COSTA COUNTY, CALIFORNIA.

The Conditions Favorable to Bee-keeping and Fruit-growing.

BY W. A. PRYAL.

Contra Costa Co. lies east and north of Alameda Co., and it has the distinction of having a large part of its boundary washed by three bays—San Francisco, San Pablo, and Suisun. It is a mountainous county; and yet, withal, it has some of the best and most fertile valleys that we can boast of, though none of them are to be compared in size to the big valleys of the State. For climate these valleys are the equal of any in California. Being sheltered by high hills and mountains, they are seldom visited by fogs; winds are rare, and frosts are seldom known. For this reason all kinds of fruit flourish to a wonderful degree. In some places one kind of fruit will do better than another, owing, mainly, to the nature of the soil. About Lafayette, Bartlett pears and apples reach perfection; in San Ramon Valley the finest English walnuts one could wish to see may be found. (Walnut Creek, the most important town in the valley, takes its name from the fact that the native California walnut was found growing there.) In the same valley cherries do so well that they bear the palm along with those of Alameda and Santa Clara counties. Then Alhambra, Amador, and other valleys have their peculiarities. Some grow grapes, some prunes, others grains and vegetables. Even grizzly old Mt. Diablo sports some fine orchards, vineyards, farms, and apiaries upon its sun-kissed slopes.

I promised to visit a bee-keeper by the name of William E. Stewart, nearly one year ago, but circumstances prevented my doing so until

every bee-keeper to see that the honey he offers for sale shall be of the very highest quality. All the legislation in the world will not help our business if we are thoughtless and careless about the quality of our product. We must make it "food fit for the gods." See to the quality first, then dress it neatly and attractively. It is the quality of an article that increases the sales, and not attractiveness or neatness. Attractiveness without quality is a deception and fraud. So let us see that we allow our honey to remain on the hives until it is fully sealed over and ripened before offering it for sale.

Nisbet, Penn.



A portion of Mr. Stewart's apiary in Contra Costa County, Cal. A hay-field in front and an orchard on the opposite side of the creek. The extracting-house is behind the white honey-tank.



MR. MONROE'S HOME.

The rear portion was made of timber cut by Mr. Monroe in what was then the redwood forest across the hills from Oakland, thirty miles away, and hauled by the chopper in one load over a primitive road fifty-six years ago.—Some of the old clapboards are yet on the house, and are plainly visible in the picture. The hand-split and shaved redwood shingles, which lasted forty years and more, were succeeded by sawn ones of the same wood.

this fall. I found him very busy winding up the season's work, the main portion at the time of my call being drying prunes and husking almonds.

He is thoroughly posted in all things progressive in farming and orchard lines. He took up the study and care of bees some six years ago, commencing in a small way; but he soon bought out an apiary across the valley. After this he purchased colonies and swarms wherever he could get them within twenty miles. To-day he has an apiary of over 100 colonies, many of which are in hives of divers shapes and makes. He has chosen the regular Langstroth frame, and many of his hives are of the eight-frame dovetailed pattern; but he believes it would be better if he had all his bees in ten-frame hives. Although the past two years have not been good ones for honey, still his crop was sufficiently heavy to pay him for the trouble bestowed upon the bees, and more. So pleased is he with the result that he is seriously considering discontinuing that portion of his horticultural work that comes during the honey season. This accounts for his working over a portion of the peaches, plums, and apricots in the orchard to prunes and almonds, as the latter do not come in with a rush; and, besides, they can be harvested long after the honey crop has been attended to. He has produced both comb and extracted honey, but he believes extracted honey will pay the better, except in

years when the bees work on flowers that yield dark-colored nectar. Speaking of the honey resources of the valley and hills about, he considers them poor, owing to the valleys being cropped with non-honey-secreting plants (except fruit-trees which bloom too early to be of any great use to the apiarist, as the colonies have not sufficiently built up to put a sufficient nectar-collecting force into the orchards. Of course, this nectar stimulates brood-rearing, and is valuable on that account). The hills, which are of a black adobe nature, are not covered with tree and plant growth such as one sees in most other portions of California, especially on the east and north side of the hills and mountains. Nearer Mt. Diablo there are better ranges. There is a variety of soils, and, possibly, more moisture.

While Mr. Stewart has some Italian bees he seems to prefer the blacks. He has some Caucasians which he likes fairly well; but he believes that, if he were to give his attention to selecting and breeding blacks he could perfect a strain that would be the equal of any bees in the world for hardiness and "workability." He says these bees have been more than half a century in California, and they may be said to form a class and race all by themselves. I shared this view with him, and I have committed myself to it in writing on a previous occasion. Who knows but the California "native" or brown bee will be bred for export the world over? Such a thing



Mr. F. E. Monroe, the venerable bee-keeper of grizzled old Mt. Diablo, pointing out to Mr. W. E. Stewart holes made in a redwood frame by wax-moths. Mr. Stewart holds a pine frame in his left hand.

is possible, though some may now look upon the prophet as visionary.

I found the apiary well equipped with bee-appliances, the most notable of which was a big six-frame reversible honey-extractor. Mr. Stewart has a large honey-tank in the yard, which may be noticed in accompanying half-tone. The apiary is not compact; it is strung out along the creek, and the hives are far apart. This is considered a good plan, as it reduces robbing to a minimum. He is going to lay a track and install a hand-car so the honey can be run into the extracting-room. He contemplates building soon a model honey-house with work and extracting room attached.

I must not fail to mention that this enterprising young gentleman is an active worker in the church he belongs to, and takes much interest in civic matters. I'm sorry there are not more like him, as it is common repute that the affairs of his county sadly need a moral uplift. His views on the liquor-traffic are pronounced, too, and I believe with him that we would have better government if the saloon could be eliminated from the politics of the dominant parties. The bosses' offices and homes, too often, are amid the fumes of bad beer and worse whisky. But the saloon's going, thank God!

Mr. Stewart drove me to visit an elderly apiarist on Mt. Diablo, some four miles from the

former's home, and I found this one of the most pleasant rides I ever took.

We called on Mr. Francis E. Monroe, a veteran apiarist, on the Livermore side of Mt. Diablo. We found him one of the pioneer ranchers of California. One would wonder why a man could come to such a place over half a century ago when the surrounding country was little better than a wild woods, and when near the then young civilization were to be found fully as good soils at a price that was almost as cheap as government land. But he picked out this place because he considered it one of the most ideal spots he had seen in his travels over the United States.

Although Mr. Monroe has been sixty and more years in California he still retains many of the characteristics of the far-east Yankee, even to the manner of speech. He told me some of his life-history. He was born among the rugged hills of Vermont, over ninety years ago, and but for a slight cold which afflicted him at the time of my visit, he was hale and hearty, although, according to his statement, "not nare so spry as I yuster be." I got him interested in the subject of relative merits of redwood and white-pine frames. He was shown that the former are flimsy, and, when the moth begins depredations in a hive, the redwood frames are eaten to pieces very quickly. He was pointing out to Mr. Stewart some of the doings of moths when my camera's eye caught him in the position shown in the accompanying half-tone.

I noticed a multitude of bees at work about the trunk of a beautiful live-oak that ornamented a portion of the front garden. Investigation revealed the fact that Mr. Monroe was practicing open-air feeding, and the bees were just having the time of their lives. Poor things! too many of them were paying dearly for the feast, many being drowned in the sweet liquid. Others were so debauched that they crawled away through the dust and dirt, few of them ever reaching the hives. The reason of the feeding in the fall was not that the bees needed food, but because there was some unsalable honey on hand, and to let the bees have it was about the easiest though not the best way to get rid of it.

I was surprised at the excellence of the honey gathered upon this mountain. It was light in color, heavy in body, and of as fine flavor as any white-sage honey I ever tasted. The yield most years is good. Seldom is there a failure.

Oakland, Cal.

THE AUTOMOBILE FOR THE BEE-KEEPER.

BY A. KIRSCH.

Very little is mentioned in the different periodicals in regard to the use of an automobile in the apiary. Probably it would interest the readers to hear a little about it. The writer of this article was in need of some conveyance to transport his family to and from church on Sundays, and he was thinking of buying a horse and surrey; but the largest rig would not quite hold his family, and two trips he would not make. He finally decided to get an automobile; and in looking



AN AUTOMOBILE FOR THE WHOLE FAMILY.

through the daily papers noticed a single-cylinder machine advertised for \$100. On examination it proved to be in good condition, and was bought. After a season's use it was found to be satisfactory and economical. It is a light touring-car and can go 15 to 20 miles an hour. Every Sunday it is used for going to church, and it takes entire charge of carrying to any place the writer's family, which consists of nine in all. It makes 12 to 15 miles per hour with this load, and beats any farmer's team of trotters with half the load.

Now as for the use that an automobile can be put to in an apiary. The second picture shows how the machine can be arranged to saw firewood and make hives and fixtures. The car is raised in the rear, and a four-inch belt is put directly on the tire of one of the wheels, and the other wheel is prevented from turning by blocking it or fastening it with a rope. The speed is just right for an 18-inch saw. Quite a thick log can be cut. The cylinder-cooling system has to be connected by means of a hose with a larger tank or barrel filled with water, for, by standing still, the air current can not cool the cylinder sufficiently. The writer sawed his firewood in this manner, and found it very satisfactory. To run the extractor, all the bee-keeper has to do is to project a shaft through the honey-house, with a small pulley, to produce a slower speed.

If one wishes to pump a large amount of water he can procure a belt pump, connect it up, and then he has a gasoline pumping-outfit. In case of out-apiaries the bee-keeper can take off the body of the machine in a short while and put a home-

made platform in its place to hold hives, cans, barrels, and other paraphernalia, and he can get there in a hurry.

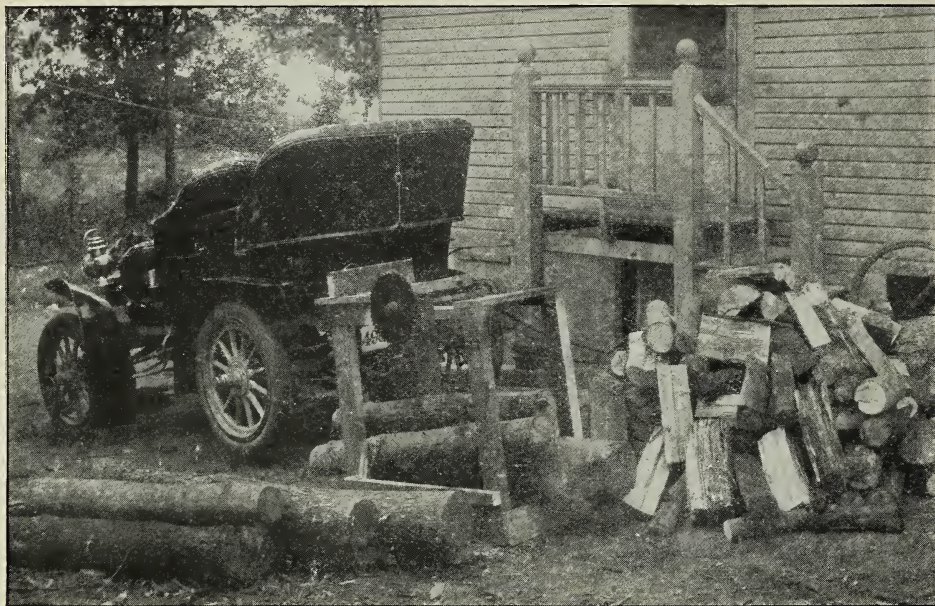
In the writer's opinion one of the single-cylinder machines is the handiest one for all-around purposes. The price should be no objection. They can be bought from \$100 up, second-hand.

In regard to running it, there is no more trouble about it than in running an ordinary gasoline-engine used on farms. If any one studies carefully the functions of the different parts, and is careful in handling the machine, it should last a good many years. The running expenses are very low. We drove nearly 600 miles within the last 6 months, and the expense for maintenance was \$9.00. If the amount were twice as much it would not equal the expense of a horse and wagon.

Brooklyn, N. Y.

[We know of quite a number of bee-keepers who use an automobile in their business, and find it a practical machine. We think that the price paid by our correspondent was unusually low, however. Second-hand *runabouts* can often be purchased for \$100; but a second-hand light touring-car like the one shown would ordinarily cost from three to four hundred dollars.

It is entirely practicable to use the machine for power; but a belt should be put on *each* rear wheel; for when one wheel is held in the manner described, while the other does the work, a very severe strain is put on the differential gears, which would very soon wear them out, and it would mean a big expense to renew them.—Ed.]



SAWING WOOD WITH THE POWER FURNISHED BY AN AUTOMOBILE.

BEES CLOSE TO STREET NOT A NUISANCE.

An Open-air Colony.

BY JACOB WAGNER.

The engraving shown on opposite page represents my apiary where I have been keeping my bees for over 25 years. When I first started I kept them inside the building in the background, but now I have them outside, and use one part of the building for storage, and the other part to extract honey, etc. The larger building to the right is my shop, where three to four men are working on benches doing cabinet and carpenter work. I have found it more practical to keep bees outdoors than inside. I have them under an arbor of grapevines, which I consider an ideal place for them. It will be noticed that the sidewalk and street are just outside the fence. This is one of the most-used thoroughfares in the place, and in all these years no one has been bothered by my Italians, which surely shows that they are a rather good-natured crowd. Some seasons I have had 50 to 60 colonies; but this last season I had only 15, spring count, which increased to 26. These produced over 3000 lbs. of extracted honey and 320 lbs. of comb honey, so I have reason to be well satisfied.

The other engraving shows a swarm of bees that I found on the limb of an apple-tree, eight to ten feet above the ground. They were hybrids, but very gentle, and did not bother me in the least while climbing up, when my face was not more than two feet away, and my hand still closer.

Through failure to find a better place the bees selected this rather odd place for their permanent

home. They had built 6 combs 10 inches wide, and 14 to 16 inches long, which contained some brood and a little honey when I discovered them. When they started to work I suppose the limbs or twigs were very thick with leaves, thus forming a covering or natural roof that must have looked inviting to them.

East Amana, Iowa, Nov. 3.

THE WINTER-KILLING OF CLOVER.

Freezing and Thawing of Clay Soil Hurts Clover; Plants in Sandy Soils Not so Likely to be Winter-killed.

BY R. F. HOLTERMANN.

The term "winter-killing of clover" is applied to the destruction of clover-plants, during the winter and spring, by means of the freezing and thawing of the soil about the plant; secondly, to the water freezing on top of the ground and over the plant, and to a certain extent about it.

The nature and condition of the soil is an important factor in the freezing and thawing process on clover. The soil which will retain the most moisture is apt to be the most injurious in the above process, because, when the soil with the contained water freezes, there is expansion in proportion to moisture contained. A well-drained soil tends to friability; moisture passes down readily; it will retain less than a more compact soil. Soil composed of fine particles such as the clays will retain a higher percentage of water than the sands; and when conditions are favorable to frequent freezing and thawing, *as a rule* more injury is done to clover on the former soil. I have

been compelled to move apiaries from sections where the land was of a clay nature to sandy sections, because scarcely any clover had survived in the clay, and there was still a goodly quantity in the latter.

If freezing takes place, and the ground and plants are well protected with snow, the frost may not penetrate the soil at all. If it was frozen, and if it remains frozen until the season of growth, one freeze does practically no harm.

It is well known that, in sections of country where the snow falls early in the winter, and remains until the season of growth, covering it especially during March, when the sun is strong during the day, and it freezes hard at night, thawing out the ground, especially on southerly exposures during the day, and again freezing it at night, the winter-killing of clover is practically unknown.

The clover-plant has main roots, smaller roots, and fibrous roots. The smaller roots contain what might be called the mouths through which moisture and food are taken from the soil and transmitted through channels to the various portions of the plant.

Let us now suppose that the soil freezes to the depth of three inches. This three inches of soil, through freezing, expands; and the greater the percentage of moisture, the greater the expansion.

Owing to the solid nature of the soil underneath, and owing to the fact that there is little if any room for lateral expansion, the frozen mass of soil must move upward. The effort at lateral expansion also tightens the hold of the soil on the clover roots; and as it is forced upward it draws the plant with it. The stronger roots below are likely to be drawn upward also. But those not

having sufficient powers of adhesion to resist the hold the soil has on them, like the sting of the bee remain in their place and are broken away from the remainder of the plant. The first roots to break off are, of course, the fibrous ones which take up the material needed to sustain and build up the plant. As soon as the soil thaws it falls apart and loses its power to draw the plant back to its former position. At the next freezing the operation is repeated, and the plant gets another heave upward, and so on. I have frequently seen in a field the clover-plants with the roots sticking several inches above the ground. Rains are of some assistance in compacting the soil. The intelligent farmer also attempts to save the field by running a roller over it as soon as the ground will permit. In part he forces the plants back into the soil in this way. The main benefit from the rain, however, is to keep the injured plant from drying out. The plant generally has some feeder-roots left, and in a moist condition throws out others and recuperates. If, however, drying winds prevail, many more die, and we say the clover has been winter-killed. The more vigorous the growth, and the more favorable the condition for plant vigor, the greater the yield of honey; and such a condition is not likely to obtain with so many roots broken.

Where the soil is frozen, and owing to the snow thawing, or rain, water lies on the surface in depressions, and the water freezes, the clover-plant is liable to smother if this condition continues for any considerable length of time. Some say the sun shines through the bright ice and the plant is burned or scalded; but this latter theory is not very generally accepted.

Brantford, Can.



JACOB WAGNER'S APIARY, AMANA. IOWA.

Although this apiary adjoins the street, there has never been a complaint against the bees.



A COLONY THAT BUILT COMBS IN THE OPEN AIR.

SOME CONDITIONS THAT AFFECT THE CLOVER-HONEY CROP.

Clover Does Not Yield Much Honey the First Year of Its Growth; a Dry Fall Kills the Old and Not the Young Plants; No Clover-honey Crop During a Year Following a Drouth.

BY VIRGIL WEAVER.

[In our Sept. 15th issue, p. 1198, 1907, Mr. Weaver had an article in which he took the ground that a severe drouth would kill the old clovers; that young clovers from seed would spring up in the meantime, as they would not be choked by the old clover; but as the plant does not yield much honey the first year of its growth there will, consequently, be little or no honey that year. He further claimed that, on the second year, there would be a yield of honey from it.

This article, although published in September, was written May 5, 1907. He then made the prediction that there would be no honey in 1907, north of the Ohio River, but a "bumper crop" in 1908—a prediction that was almost literally fulfilled.

In the present article he has given additional data along the same lines. He has, apparently, given the subject not a little attention and study, but Mr. Doolittle, another close student of nature, apparently does not agree with him. See his article in this issue.

We should like to have this subject thoroughly discussed. In short, is Mr. Weaver correct in his claims? Do the facts in your locality bear them out?—ED.]

I want every reader of this article who lives in the drouth-stricken area to mark my words; that is, that during this coming year there will not be ten per cent of a white-clover crop east of the Mississippi River. There are, of course, sections here and there where the rainfall has been sufficient to make a clover crop for 1909. I have been trying to hammer this very thing into the heads of bee-keepers for the last five years—that is, that there is no honey-flow following a dry

year. I have studied this white-clover question closer than any thing else, as I deem it the most important question connected with bee-keeping. I have not missed a white-clover crop in seven years, although there were two complete failures in Central Kentucky during this period. I will explain: I had a good crop in 1902, averaging 100 pounds per colony, and again in 1903. The fall of 1903 in Central Kentucky was very dry, killing out the white clover wherever I saw it, so I shipped my bees to Iowa for the season of 1904. Inexperience in shipping bees long distances by freight cost me several colonies and weakened the rest; but laboring under these difficulties I secured an average yield of 75 pounds per colony. The year 1904 was dry again in Central Kentucky, and there was an average rainfall where my bees were in Iowa, so I remained where I was for another season, and my 1905 crop in Iowa was 60 pounds per colony. The season of 1905 in Central Kentucky gave an excess of 1.25 inches rain, and I knew what this meant, so I shipped my bees back there. Out of 130 colonies shipped I landed and wintered 115, and sold, in 1906, 12,000 lbs. of white-clover honey, and increased to 240 colonies. From these in 1907 I sold 30,000 lbs. of honey. For the season of 1908 the drouth cut us short, and our crop does not exceed 15,000 lbs. Where my bees were located in Iowa the season of 1906 was a complete failure; 1907 and 1908 were little better. Most of the honey gathered there for the three seasons mentioned was from other sources than white clover; but in that very locality, Washington County, Iowa, the prospects are good for a white-clover crop in 1909. Here in Central Kentucky there will be nothing doing in the white-clover line for next year, and I shall ship my bees to the mountains of Eastern Kentucky for the season of 1909, where there is basswood, poplar, chestnut, and sourwood galore.

HOW DROUTH AFFECTS THE CLOVER-PLANTS.

I want to tell that farmer, page 1425, Dec. 1, something about white clover. In one way he is right, in another he is wrong. He is wrong so far as honey is concerned for 1909. Take a young clover-plant that started last May, for illustration. With a normal rainfall and plenty of room, room that nothing but a drouth can give, by the first of November, in my locality, this plant covers the ground with roots and runners in a circle that varies from 6 inches in poor soil to 2 feet in the best soil—an average of about a foot to the plant; and with a normal amount of rain the *next* May and June it makes a hundred blossoms or more. Now, if the rain stops, say, the first of July, this plant covers but one-third of the space it would have covered had the rain continued, and sets but one-third as many blossoms to bloom the following June. The honey from these young plants, therefore, is cut two-thirds. On this point the farmer was right. If all our plants were started from the seed in 1908 we could count on at least one-third of a crop this year; but this is not the case. During the second year of the life of this young plant, with a normal rainfall it continues to grow, and sets new roots and runners, also embryo blossoms, and by Nov. 1 of the second year it covers a larger space and is ready to set almost as many blossoms as it did the first year of bloom. How-

ever, this first year of bloom of a clover-plant is the best year for honey, as the blossoming period lasts longer. The old plants seem to mature their bloom in a shorter period, therefore shortening the honey-flow in proportion.

One thing I have not mentioned is that the growth made by a white-clover plant this year blossoms next year and then dies out. That is, if a plant covers a space a foot in diameter the first year, this growth blossoms the second year, and by July 1, in my locality, stops blooming and starts a new growth of runners and roots that will produce blossoms the third year. Now, if there is no rain after July 1 of the second year, there will be no blossoms for the season following, and the part of the plant that produced the bloom during that second year will die out the winter following, just as the stalk of a raspberry-plant that bears the fruit this season is dead by the next spring and a new one takes its place. This new growth, under normal conditions, will keep spreading until, as Dr. Miller says, it might cover a whole acre; but as soon as the first dry year comes it dies out the winter following. This is one instance when clover winter-kills.

Another instance of winter-killing is when it rains for several years in succession and the ground becomes so thickly set in clover that it starves itself out, just as corn planted too thickly literally starves, so that the crop is destroyed.

Where the ground is covered with this growth of old clover there will be very few new plants started, as the old clover starves the young plants to death. That is just what happened last season. The old clover covered the ground so thoroughly that there was no place for new plants, and, besides, there was no rain to enable the old plants to make a new growth for this coming season. There has been some rain lately, and there will be a few blossoms here and there, and some of these old plants will hold enough life through the winter to begin to grow next spring; and, aided by the millions of young plants that start next spring, will make a large growth this next season provided the rains come, and in 1910 the fields will be white again.

THE EFFECT ON HONEY CROPS.

These drouths are a blessing in disguise. First, they keep down increase, as bees winter badly after one of these dry years, thereby keeping the country from becoming overstocked. Second, our bumper crops come from the first year's bloom of plants started from the seed the year before. The year 1901 in the North Central States was very dry, while 1902 was very wet. The year 1903 gave the largest crop from white clover on record. Take another instance: The year 1906 was dry at Dr. Miller's, in Northern Illinois; 1907 normal, and 1908 gave the doc-a bumper crop. Here at home, the year 1900 was dry; 1901 wet, and in 1902 the yield was 100 lbs. per colony; 1902 was wet again, and the yield in 1903 was 100 lbs. per colony. The fall of 1903 was very dry, and there was no honey in 1904; 1904 was dry again, therefore no honey in 1905; 1905 was normal, and we had a good crop in 1906; 1906 was normal, and there was a good crop in 1907. The fall of 1908 was the driest in 37 years, the rainfall from June 10th to Nov. 1st being less than 6 inches. On this account I am looking for no honey from white clo-

ver during 1909. To prove my faith in what I say, I will take, as my share, 10 lbs. per colony of white-clover honey gathered by my bees in 1909 to any man who wants to run them on shares.

PROSPECTS FOR NEXT YEAR.

This white-clover question is the most important theme for discussion in the whole white-clover belt. I know positively that there will be no honey from white clover this year, so I need no supplies, and I do not need to rush my bees in the spring to prepare for a flow that will not come. I shall ship them off to the mountains, where there is a chance for a light flow at least. In case the rainfall is normal next spring, and a good crop of white clover starts, instead of having the blues and letting my bees die out I shall increase them and prepare for 1910. Or during 1909, if the rainfall is normal until the 1st of July, we can stand a dry spell, as the clover has made a new growth that has never bloomed, and will produce a honey-flow in 1910. Again, it may be dry until the 1st of July, and the clover-flow for 1910 will still be assured if there is a large amount of rain from July 1 to Nov. 2. I am talking from actual experience, and I have no theories to advance. That farmer who wants more bees this year has something yet to learn about clover.

White clover in a normal condition Dec. 1 is, nine times out of ten, still in a normal condition April 1st; whether the winter is wet or dry, or a hot or cold one, the result is just about the same. It is almost impossible to kill clover in winter when it is in a normal condition. In wet soils that heave things out of the ground by freezing and thawing, white clover will manage to have enough roots sticking in the ground to maintain life. Tramping clover while frozen will kill it. A dry fall will not ruin *young* white-clover plants; but it is death to the *old* ones. There will be a bitter wail from bee-keepers in the white-clover belt next spring, as 90 per cent of the clover is already dead that would produce honey in 1909.

Valley View, Ky., Jan. 5, 1909.

BEE-KEEPING IN NEW ZEALAND.

Some Questions for Dr. Miller on Queen-rearing.

BY H. BARTLETT-MILLER.

1. In Dr. Miller's description of queen-raising in his "Forty Years Among the Bees," would it not do to brush the bees simply from the comb of the queenright hive into the cell-building hive instead of doing that, and changing the hives as well? What is the object of changing over the hives? Dr. Miller does not explain that, and for women it is heavy work.

2. Will you ascertain from him whether or not the good results of the foundation plan, that proved an exception during 1902, was repeated in succeeding years, as Dr. M. himself expressed it?

3. Regarding hustlers capping honey greasy or watery, would you call this queen good enough to breed from, for Italianizing my apiary? Dec. 5, 1907, being then in her second year, she swarmed, with bees to cover only four Jumbo frames. The honey season had just then com-

menced, and for eleven weeks we had little or no rain, and the season was so foreshortened as to be almost a failure—any way a poor one. Jan. 19, 1908, I placed her with two frames of brood only (no honey to speak of, as she laid up to 19 cells wide beneath the top-bar, and 14 wide against the bottom-bar on a splinted frame) inadvertently on the old stand, and had removed five frames of brood (hive is ten-frame). At the end of the season, i. e., on March 15, the hive contained nine of the frames *literally* full of honey from top to bottom bar, and end to end. The tenth frame had about half brood on both sides, and a little honey or pollen. All the honey was capped dark-looking, and quite unpleasant, to my liking. There are few Italian colonies here (I have only five), and I am inclined to call such a queen a good one; but how does she compare with your experience? The eight frames in the hive at the time of taking her brood away contained wired sheets of foundation, full sheets. The queen was imported from Australia.

This spring, on August 2 (corresponding to Feb. 2 in your climate) she had three frames about three-quarters—perhaps slightly more—full of brood, and now, at the beginning of September, I am putting her in a nucleus to obtain breeding comb and lengthen her life. Is this correct? Her bees would shortly have swarmed had I not removed her, as we have had a spring drier and sunnier than I have ever known before.

White clover is our main honey crop, and this is a dairying district. I dare say other plants assist considerably, as dandelion is very common in pastures; and in a dry season that weed-pest, pennyroyal, flourishes over 24 inches high, even on the dryest land, and has had to be included in our schedule of weeds in the noxious-weeds act. Pennyroyal honey has a slightly unpleasant taste, but not unbearable. It yields in dry seasons enormously, judging by the bees and other insects upon it.

I should add that half of my black colonies last autumn had to be fed, though this was partly due to too much humbugging in a season that turned out a poor one. But the Italian colony referred to had some manipulation also.

4. On page 799, July 1, Stray Straws says, "Smoking not allowed during office hours, etc.," which you endorse; but can you not put it in again to read during *any* hours?

5. Is not our New Zealand bottom-board superior to the Danzenbaker? It is simply a flat board two feet long by the width of the hive, having in the front a V $\frac{3}{4}$ inch deep, cut from the full hive width in front to the apex of the V, 4 inches back, so that, to regulate the width of the entrance or shut the hive right up, it is only necessary to slide the body to or from the front edge. In hot weather the body overlaps the alighting-board, which is sloping, and attached or not, as desired, to the cleats beneath the bottom. With the Danzenbaker one must have a block of wood to close the entrance, I having used a frame; and to do so during a case of robbing, the bees actually moved the frame end away so as to get past it. This could not occur with our V-shaped bottom and hive drawn right to the back edge of the bottom-board. I have ten Danzenbaker bottoms in use, and am doing away with them gradually, as our climate does not warrant their use. We

have no snow, and frosts are gone by 10 A.M. in the depth of winter. Every frosty night means a gloriously warm day, and bees fly whenever it is not wet.

Kihikihiki, N. Z.

[Dr. Miller, to whom this was referred, replies:]

1. The object of the whole proceeding is to have all the bees except the field force in the queenless hive while leaving the brood with the queen, and it seems the quickest way to do it is to exchange hives. We thus have in the cell-rearing hive not only all the very young bees, but a younger lot of field bees as compared with those of the other hive. If we "simply brush the bees from the combs of the queenright hive into the cell-building hive," we have in the cell-building hive only the very youngest bees and the older part of the field-bees; whereas by the changing indicated we leave in the cell-building hive *all* the bees of the two hives except these older field-bees. One can hardly think of a better assortment of bees to start and complete queen-cells.

If it be too heavy work to lift the hives, the change can be made by merely changing frames.

The whole thing looks fussy on paper, and between you and me it *is* fussy. Moreover, there is no need of any such fussing. I had supposed it necessary to have in the cell-building hive no brood except the one frame for cell-building. I have found since that no such necessity exists. If a frame partly filled with comb freshly built be put in the center of the hive, the bees have such a strong preference for it that no cells to speak of are built on the old combs. So, instead of all the fuss detailed one merely needs to change the queen from one hive to the other, which is simple enough. In actual practice, all I do now is to put the freshly built comb in the center of any colony made queenless, and I get cells of best quality. It is very, very simple.

2. It works well in many cases, but can not be put down as reliable in all cases.

3. A queen whose workers cap honey watery is out of the question for comb honey, but may be all right for extracted. That aside, I should say that the question whether a queen is good enough to breed from should not be settled merely by the record of her performance. The question is not merely, "How well has she done?" but "Has she outstripped others?" If she is the best you have or can get, then she is good enough to breed from. What you report of the performance of that queen was likely excellent, considering the poor season.

Once a queen has her reputation thoroughly established, your plan of keeping her in a nucleus is excellent.

But we do have early swarming here—not, of course, up here in the North, but remember that some of our Southern States are nearer the equator than you are.

4. Your amendment with regard to smoking is good, and is adopted in some cases. As civilization advances it will be more general.

5. Hardly worth while discussing which is better when we have something that is better than either—a plain shallow box two inches deep, with an open-work rack to put in during the time when bees would build down.

HEADS OF GRAIN

FROM DIFFERENT FIELDS

SUPER BELOW BROOD TO DISCOURAGE SWARMING;
A LARGE ENTRANCE MEANS BROOD IN SUPERS.

On page 1384, Nov. 15, Joseph Tinsley tells of putting a super under the main hive to prevent swarming. While I believe this would be a preventive, would it not tend to a decrease in the working force above the hive-body and thus result in unfinished sections? and would it not increase the danger of a queen laying in an upper super to have a very large entrance to hive? In regard to this last question I have tried almost all sizes of entrances, and always found that, when I got above a medium, there would be brood in the super. Perhaps my case is an exception.

Enid, Pa., Dec. 14. JOHN R. LOCKARD.

[This was referred to Dr. Miller, who replies:]

It is the Simmins plan, giving room below the brood-nest for the bees to build in, and, as fast as they get well started, putting above the brood-nest what they have started, and giving fresh room below. The claim is that bees will not swarm so long as they have room for fresh building below the brood-nest. For some reason the plan has never taken much hold in this country.

It hardly seems that it should interfere with work above the brood-chamber as you fear. A common practice is to put an empty super under the first as soon as the first is about half filled. Instead of this, if the empty super be put under the brood-chamber it ought not to interfere with work in the other supers more than if the empty super were put directly under the other supers—possibly not so much.

You seem to imply that putting an empty super under the brood-chamber would enlarge the entrance. Why should it make any difference in the size of the entrance? I'm not sure what you call a large or medium entrance; but I use what I think would generally be called a large entrance—two inches by the width of the hive—and I never discovered that it had any tendency toward brood in supers.

THICK UNCAPPING-KNIVES PREFERRED; CONDITIONS IN WASHINGTON.

On page 1250, Oct. 15, Louis Scholl advises a common long butcher-knife, well sharpened and kept free from the gumming of honey by frequently washing in cold water. When I was in California in 1897 I worked in Mr. W. T. Richardson's apiaries of 900 colonies as foreman, and we had six honey-knives, all made with straight handles, but with guards like a bowie knife. The blades were 13 inches long, sharp on both edges, and beveled on both sides the same as the Bingham is on the lower side, but were made of thicker metal than a common corn-knife. Like Mr. Scholl we always uncapped with a downward stroke, but kept our knives in hot water, each person using two knives, one in the hand and one in the water, changing as occasion required. Mr. Richardson used hives 14×20, 12 inches deep, and supers the same, with the frames put in the short way in two of his apiaries; the other was

the old Langstroth portico pattern. I like the straight knife with the downward stroke.

I took 45 gallons of as fine clover honey this year as I ever saw, from eight stands, spring count, and had only one swarm; but after the honey-flow was over I increased to 17, and have all in winter quarters.

While Northwestern Washington is not much of a bee country, yet if one takes proper care of the bees they will pay their board and make the keeper something besides. It does not get very cold here, but it rains from November till May. It is raining now almost continuously.

I use both deep and shallow frame supers, and like both.

J. C. BALCH.

Ferndale, Wash., Nov. 18.

[This question of the size and shape of the uncapping-knife is getting to be interesting. We should like to hear from others who have used the straight knife. Then is there an advantage in having the blade heavier in order to hold the heat longer? Let us hear from others.—Ed.]

A THIN UNCAPPING-KNIFE OF GOOD STEEL PREFERRED.

I have seen the controversy about uncapping-knives, whether they should be used hot or cold, etc. I should like to give my opinion on this subject. If the Bingham knife were made about half its present thickness, and as good material put into them as there is or was in the Novice knife, it would help matters considerably. A thick knife will tear combs that a thin knife will cut easily.

About grinding or keeping the knife sharp, the frame used is a great factor. Use a frame perfectly free from nails, wires, staples, tin offsets, etc., and you solve the problem to a great extent. The next frames I order will be made so the nails can be countersunk out of the way.

C. F. HOCHSTEIN.

Mangas, Pinar del Rio, Cuba.

PREVENTING THE ENTRANCES FROM CLOGGING.

During severe weather in winter I have noticed little pools of water gather in the entrances of the hives, which sometimes runs out, but just as often it freezes when it strikes the cold air, thereby clogging the entrance. Last winter I placed a hive with the back end about an inch lower than the front end, and at no time during the winter did I find a particle of ice or any dead bees clogging the entrance, although it was only 4× $\frac{3}{8}$. This colony was the strongest one in the yard last spring. By placing the back end of the hive lowest, the moisture from the cluster of bees runs to the back end of the bottom-board and freezes so far from the entrance, leaving it open all winter. I am using an entrance 3× $\frac{3}{8}$ this winter, and believe this is the best way to keep them from being clogged. A storm-door should be placed over the front of the hive to prevent the snow from falling on these entrances. Of course, when spring comes, or the rainy season commences, the hives should be tilted back until the front end is the lower.

BERT SMITH.

Marathon, Iowa.

[We have our hive-bottoms slanting toward the front, and we seldom or never have any ice accumulate and clog the entrance. We believe

it is a mistake to let the water run toward the back end and freeze. A layer of ice just under the cluster of bees can not do any good, and may do harm.

Better slant your bottoms toward the front and keep the entrance open by raking out the dead bees occasionally. If you keep them out of the way, ice should not block the entrance as you speak of.—ED.]

THE EFFECT OF DROUTH ON THE VARIOUS CLOVERS GREATER IN SPRING AND SUMMER THAN IN FALL.

In regard to the drouth killing clover, I would say that, in my experience, it depends very much on the kind of clover. I never saw a fall drouth kill common red, and have seen the Dutch or white clover entirely ruined thereby for the following season. Of course, any land where white clover has once seeded will send up a crop from the seed remaining in the land the next spring. I have witnessed this twice; but from some cause the young growth failed to furnish any honey worth mentioning.

A spring or summer drouth is what hurts common red clover, catching it before the roots have struck very deep into the soil. I should not be much surprised if Dr. Miller's, that seems nearly dead, would come out all right if it does not put off raining too long.

I find it useless to sow red clover on spouty land, as any unusual wet weather will cause it to be unhealthy, even if it should live over winter. It doesn't seem to suffer so much from heaving—the natural expansion of the soil from freezing—as from a kind of spewing, which is very noticeable on roadsides during a freeze just after a rain. The ground seems to give up the water, which just keeps rising and freezing until it forms ice on the order of honey-comb, one or two inches thick. Now, if this spewing takes place around a clover-plant the ice first freezes about the crown; and as it keeps forming beneath, the crown has to come off or the plant pulls off, with about the same result in either case. The thorough filling of the soil with the fibrous roots of white clover or blue grass seems to act as a protection from spewing, as it is notably absent in such places.

Odin, Mo., Dec. 24.

D. B. THOMAS.

A SUMMER AND FALL DROUTH DESTRUCTIVE TO THE CLOVERS.

Your old farmer friend is quite right when he said that a drouth in the fall does not kill white clover. That is in accordance with our experience here. The white clover will stand a pretty severe drouth in the fall; but when we have a continued drouth through July and August the bee-keepers here know for a certainty that there will be no clover honey the next summer, which is just our case in Northern and Central Kentucky. We have not had any rain to speak of since the 5th of June, and our ponds and cisterns are still dry; so we are not counting on any clover honey next summer; but we have never failed to get a good crop of surplus honey, and plenty left for the bees from the aster, for more than 20 years until this fall, which is the first failure we have met. It is also fine honey for table use. Almost every one here likes it better than white-clover

honey. I have always lived on a large farm, and have been a large producer of extracted honey for over 20 years, and I have always watched the clover crop with great interest, and several times I have known a drouth through July and August to kill the clover. Your farmer friend is right again when he said that, when the rains come in the spring, the white clover will spring up thick. That is all true if we have rain next spring. There will be a fine crop of white clover come up from the seed; but the clover that comes from the seed in the spring does not produce any honey until the next year. This is not theory or guesswork, for I am writing from practical experience; but soil and climate might make some difference. Our soil here is limestone soil, with clay subsoil and no sand.

Boyd, Ky., Dec. 26

H. C. CLEMONS

CLOVER FREEZES WORSE IN WET GROUND.

I have noted that clover freezes out most in wet ground. I should think that a dry fall and winter would be favorable to clover except that it would not be as strong and luxuriant. It certainly would not freeze out as badly in a dry winter as in a wet one.

The winter-killing of clover is due to what is called freezing out. The frost in the ground pulls the clover out of root. A wet, freezing, and thawing winter is very hard on clover, and you will find in the spring that the frost has pulled the clover stalks or roots out of the ground four, five, or six inches. The water on the ground freezes in a comby form, and not in a solid cake as on a pond, and these combs will rise up in a single night one or two inches; and as they rise up they pull the clover-stalk out with them. This occurs particularly in low wet ground, but will occur on any ground that is wet from rains or melting snow.

Butler, Ind., Dec. 26.

L. H. HIGLEY.

A GOOD CLOVER FLOW FOLLOWS A WET FALL.

I have been a farmer and bee-keeper all my life, and I have seen exposed hills that were a mass of white clover dry out so that there was not a live plant left when winter came, although the bluegrass stood it all right; and I have noticed that, when we have a dry fall, we have weak clover in the spring, and when we have a wet fall we have lots of young clover, and generally a good honey crop the next year unless it is too wet and cold when it blooms.

The only time I ever saw wet hurt the clover was one winter years ago when the ground was frozen and it rained and froze as soon as it struck, until there was an inch or more of transparent ice on the ground which stayed for a week or more and smothered the clover. I think the clover is in good condition here this winter because we had a very wet spring, and more grass than the stock could eat, which protected the clover during the drouth.

Ankeny, Ia., Dec. 21.

J. W. SCHLENKER.

CLOVERS ALIVE.

I have examined clover closely this fall, and find it green and alive where other grasses seem dead. I have examined it on both clay and gravel soil with the same result.

East Trumbull, O.

W. C. EASTMAN.

HIVES WRAPPED WITH PAINTED CANVAS; TALL HIVE-STANDS USED ON ACCOUNT OF DEEP SNOWS.

To prepare my hives for winter I wrap them with burlap and then cover this with a square piece of painted canvas or tar paper folded down so as to shed the water. I formerly covered the hive with a drygoods-box, but I do not like that plan, as the inside of the hive seems to get too warm. The method of wrapping the hives provides a covering that is wind and water proof.

We have very deep snows, and I keep all my hives on high stands on this account. I lower them, however, to stands only eight inches high in the spring, keeping each colony in its previous location.

C. A. MANGUS.

Altoona, Pa.

[You do not say any thing about any method for holding the folds of painted canvas or tarred paper tightly down around the hives; but we suppose you use, of course, either a string or strips of wood tacked on the sides and ends of the hive.

As you say, a tight water-proof cover of painted canvas or tarred paper is better than a drygoods-box. Unless said box has some sort of roof to keep snow or rain from leaking through, it is worse than nothing.—Ed.]

MOVING BEES.

I shall move my bees about 100 yards this winter and would like to have your advice.

Wofford, S. C., Dec. 12. S. CHEATHAM.

[It is difficult to move bees a short distance in a warm climate like yours, for we assume that the bees can fly nearly every day in winter; but it can be done in this way: Move the whole apiary to a point some two miles away from their present location and keep it there about a month; two or three months would be better. Then move them back to the spot where you desire them. This would be the only practical way to move them 100 yards. By taking the bees away two miles or more and keeping them, say, for at least a month or two months, you would cause them to lose their sense of the old location; and when you put them back they will go to their new stands, although probably a few might return to the old location, but we think not many.—Ed.]

BEES DISINCLINED TO STORE IN DRONE COMBS.

On page 1425, Dec. 1, you ask for information regarding the use of drone comb for extracted honey. I have had considerable experience along this line, and my conclusions are against drone comb as a rule. I have several times underestimated the amount of foundation needed, and had to start swarms on starters. Result, a lot of drone combs which I placed above excluders in extracting-supers. As a general thing, bees store in the worker-cells, leaving the drone-cells clean and polished, ready for the queen to lay in if she can get at them. If they are crowded they will store in them; and, indeed, they generally start to fill them about as soon as they start capping the worker-cells. The only exception to this rule, I have noticed, is in the case of a freshly hived swarm, which will store in drone comb freely. I fancy

I may be missing the point in this letter. Perhaps it is intended that all extracting-combs should be drone only. Probably in that case bees would store all right. Drone comb does certainly extract a little cleaner than worker.

WM. L. COUPER.

Cannington Manor, Sask., Dec. 17.

THE LEBANON BEE-KEEPERS' ASSOCIATION.

Our association was organized two years ago with eleven members, and now has a membership of 46. They control 1350 colonies which produced, in the season of 1908, 20 tons of nice comb and extracted honey which finds ready sale in our local markets. The ruling price is 20 cents.

The following officers were elected to serve for the year 1909: President, H. K. Beard; Vice-president, Wayne D. Shilling; Secretary-treasurer, E. L. Brown; Directors, J. H. Miller, A. M. Schaffner, and W. H. Marks.

Lebanon, Pa.

E. L. BROWN, Sec.

MEETING OF MASSACHUSETTS SOCIETY OF BEE-KEEPERS.

The third regular meeting of the Massachusetts Society of Bee-keepers was held in Ford Building, Jan. 2, with a large number present.

President Reed introduced Mr. W. R. Brooks, of the Amherst experiment station, who spoke on certain crops with reference to their value to bee-keepers. Among others he spoke of the high value of the clovers from two standpoints—one as a honey crop, and the other as a crop by which old worn-out land might be renewed. He gave a very detailed account of the fertilizers to be used and those not to be used, and spoke of the different kinds of clover for various purposes.

Lists of wild flowers were given—early spring ones for pollen, and others for pollen and honey.

After Mr. Brooks' lecture some time was occupied in discussion of a proposed law for the extermination of bee diseases.

The next meeting will be on the evening of February 6, Ford Building, Ashburton Place, Boston.

X. A. REED.

QUESTIONS CONCERNING THE SPIDER PLANT.

On page 1262, Oct. 15, I notice reference to the spider plant for honey. I am interested in that plant, and wish to grow it. What ails the plant? Why do not more bee-men grow it for honey? Is there any thing about it that will hurt the bees?

THEO. RYCKMAN.

Ithaca, Mich., Dec. 15.

[The spider plant is a beautiful ornamental as well as a honey plant. It requires good soil, and in most localities it will not grow spontaneously. It must be cultivated, and the weeds must be kept away until the plant has attained a fair growth. Its near relative, the Rocky Mountain bee-plant, grows wild in a mountainous country. You can grow the regular spider plant in Ohio or in most of the Northern States; but you will not be able to grow large fields of it and make the venture pay from a honey or a money point of view either. We tried it some 25 years ago on our honey-farm, but it did not pay in dollars and cents.—Ed.]

POULTRY DEPARTMENT

CONDUCTED BY A. I. ROOT.

STARTING EGGS UNDER HENS BEFORE PUTTING THEM IN AN INCUBATOR, ETC.

When I started I bought what I thought was a good incubator, but it was a very poor machine. I tried putting them ten days under hens and then taking all into the incubator and setting the hens again. I found there was no trouble in finishing the eggs when they were half hatched. I tried starting them in the incubator, and then putting them under the hen, but that was very little better than doing it all with the machine. I used that machine for some years in connection with hens. I could double the capacity of the hens. I would set about ten at once.

About this time I conceived the idea of doing without a fire in the brooder in May. I made a fireless brooder and put a batch of chicks in it. I raised about all of them, as I remember now. I made another one and put the next lot in it. The weather was sunny and warm when I put the first lot out. When the second lot was ready it was a rainy spell, and cold. These all died. I see now it was too poorly made. That was enough of the fireless brooders for me. I have used fire ever since.

CHILLED EGGS; SEE PAGE 648, MAY 15.

I have had considerable experience with chilled eggs in the 24 years I have been in the business. Sometimes they will live, and at other times all will die when you wish very much they would all live. I went away one March day, and a hen came off the nest after dinner. I came home at six o'clock and put her on, but the chicks were dead. I had paid \$5.00 for the eggs. My friend, who lives near, took several settings of eggs out to test. He forgot and left one, and found it the next morning. A little skim of ice formed that night. The egg hatched two days late. This egg was well on the way. In August a hen had hidden her nest under a bush and in the way of the surplus water. During a thunderstorm in the afternoon the eggs were washed down the waterway some distance. We found them the next afternoon. They hatched well. I have at different times left a tray of eggs out all night in the cellar when the temperature was between 50 and 60. But few will be killed if it is in the last half of the hatch. In the first four or five days the eggs will stand but little abuse.

MANY CHICKS TO A HEN; SEE PAGE 238, FEB. 15.

I wonder how many will try putting many chicks with a hen because A. I. did so well. Don't forget that he had one of the best-bred hens as a mother that you can breed. A Leghorn is a good mother, and a game better yet. You have light weight, so none are hurt because of the tramping, and you have the good care that comes with the game and Leghorn. I should like to have A. I. try ten hens and see if about two-thirds of the brood would not go bad. It takes a good mother to care properly for many children of any kind.

My father and I have feed tons of alfalfa, cow peas, and some soy-bean hay, and our experience says that there is no hay or feed equal, as a milk-maker, to soy hay. This is not saying alfalfa is not a grand feed, but we do know that when we stopped feeding the soy hay we had to add grain to keep the cows in the same production. I do not keep cows, but my father does or did, and has been a careful feeder, and likes to try all the new feeds. We raised some vetch hay also.

I use lucerne for green food part of the time now. It is a permanent plant, and grows 7 feet high. May 21 it is from 4 to 5 feet high. It is as sure as taxes. The hens eat it readily. The seedmen pushed it some 12 years ago. Mine is that old, and is getting stronger every year. I like it for shade and for the chicks too.

W. W. KULP.

Pottstown, Pa.

Friend K., your plan of starting eggs under a hen before putting them into an incubator is what is described as the "bifold method," in friend Grundy's little book entitled "The Grundy Method." No doubt many kinds of incubators would give a better hatch if the hens give the eggs a start. But the principal difficulty, as it now occurs to me, is in getting a sufficient number of sitting hens started at one time to keep even a small-sized incubator running. If you take eggs away from the hen after the first five or ten days, and give her a fresh lot, that might help the matter somewhat—at least after you get agoing. But let us look at it this way:

In this book, the Grundy Method, he has made

another discovery or invention; and this discovery is that an ordinary hen can take care of 30 or 40 chickens, to say nothing of the 70 chickens that I gave to one hen; and Grundy recommends giving a hen a large number of chickens, and then calls it a "fireless brooder;" and I must confess that a sitting hen might be quite an important adjunct to any sort of fireless brooder—that is, if you give her 30 or 40 chicks, or double that amount, as I did.

Just one point more, and then we are ready for our summing-up. Somebody else made the great discovery that you can start eggs with an incubator and then give them to sitting hens to finish. Now, if it is a great benefit to let the hen start incubation, and another great benefit to let them do the finishing of the incubation, and a third great benefit to give a sitting hen chickens after they hatch, why not adopt the old way from beginning to end, and give one hen all the chickens that two or even three hens or more hatch out, as the farmers' wives are doing and have been doing for ages past?

In regard to the plant called *saciline*, I was one of the first (I regret to say) to help boom this great forage plant, and it has been growing on our grounds more or less every season for perhaps a dozen years; but although we have it in what we call a rich place it never has made a remarkable growth, and, worst of all, we have never found a domestic animal that would eat it or pay any attention to it. The hens may have been helping themselves to it, but I have not noticed them doing so. I will try to keep watch next season. It is certainly very important just now to hunt up the very best forage-plant for poultry that the world affords; but so far I have never found any thing to come anywhere near lettuce, especially the head lettuce grown in Florida.

While I am about it, this Grundy book contains another great secret. A method has been advertised in the papers for chicken feed, for only 8 cents a bushel; and this book tells us it is shredded alfalfa. In order to get chickens to take it to advantage, boiling water is poured over it in a tub the night before. The next morning it is mixed with corn-meal middlings and bran. This feed during the winter time gives the fowls a reasonable amount of green food. But I do not see what there is new about it. Alfalfa has been used for years in just this way.

SELLING SECRETS; "SPROUTED OATS;" CHICKEN FEED FOR "ONLY 8 CTS. A BUSHEL," ETC.

While there are some things that seem to be wrong and unfair about advertising secrets, there is one feature in connection with it that promises great good to the poultry-keeping fraternity. Most of the men who have secrets to sell have devoted considerable time and care to their experiments. The principal fault I have to find with them is that they do not furnish a nicely gotten-up and decent-sized book for the 50 cents, \$1.00, or \$5.00 they ask. And then by all means let the purchaser of the book show it to his neighbor in just the way people are in the habit of showing their periodicals, books, and every thing else to their neighbors in a neighborly way. As an illustration, I saw advertised in some of the poultry-journals "The Angell System of Securing

Fertile Eggs." The price was 50 cents. Well, I sent the money without signing any agreement not to divulge, etc. The answer came back that the book would not be furnished until I signed the secrecy document. But I wrote back, and told them to return the money, under the circumstances, and I begged to be excused for not signing such a pledge. I thought I had failed for once in getting a secret; but this morning I found on my table a little book of four and a half small pages. You see it is a pretty hard matter to *return* 50 cents instead of sending a book that costs less than a nickel. Now, this Angell system is something new—to me, at least—and I am fully satisfied it is valuable. You want a yard big enough to hold, say, a dozen hens. This yard is divided into two parts. Have the nest-boxes in the partition between the two parts. Every morning the twelve hens are put in one apartment, and the male bird in the other one. Every hen that lays an egg or goes into the trap-nest goes *out* into the apartment with the male and is promptly served. When night comes, the laying hens are with the male bird. Those that do not lay can be removed, and the next day put in the twelve you have good reason to think are choice laying hens. In this way I can readily believe that every egg, or almost every one, will prove fertile. Every morning the male is alone in the yard by himself; and the author says he should not be allowed to serve more than twelve hens, in order to have every egg fertile. The book does not tell us about hens that lay every other day or every third day. In fact, there are a lot of points connected with this method that are not discussed or made plain. There is a diagram of two pens with nest-boxes between them; but I can not fully understand it, to save my life. There should be plain pictures and a record of experiments. Perhaps the author will get out a bigger book further on.

There are some bad misprints in this little book, which muddle the reader. For instance, in one place where he means to speak of *nest-boxes* the printer has made it *next* box. I was obliged to spend quite a little time before I found out that the writer meant *nest-box*. And this kind of cheap work has been true with nearly all the secrets I have purchased.

I am glad to say that this Angell system is the most valuable secret I have yet gotten hold of in this way. Even if it is imperfect, it suggests a new field for experiments, and I do not know but the 50 cents is pretty well invested in this brief little book.

Now, I want to say a word more about this advertisement that is in all the poultry-journals, of feed at 10 cts. a bushel. Since that came out, another advertisement reads "Only 8 cents a bushel" The advertisement says this is not sprouted oats nor beet pulp, but a real food. On sending for the "Free Booklet for Facts" we read:

I invented the cheapest good poultry food known, and it costs only 8 to 15 cents a bushel. And it is not sprouted oats nor beet pulp, but a *real food*.

In another place we read also:

We have increased the weight of hundreds of fowls two to three pounds in ten to fifteen days, and often doubled their market value.

When I first read that, I thought it must be a mistake in the print; but after I received the \$2.00

book I found the same thing stated in a way that can not be misunderstood. The author claims that from two to three pounds may be gained on each bird in fifteen days, at a cost of only from 6 to 12 cts. each. This wonderful feed that costs only 8 cts. a bushel, which the author claims he discovered, is scalded clover hay mixed with cornmeal middlings and bran sprinkled over it. The clover or alfalfa is cut into lengths of $\frac{1}{4}$ inch. It may be that our friend Fred Grundy did discover it; but I can well remember my father feeding his horses on just the same thing fully sixty years ago; and chopped clover has been scalded and fed to fowls in winter time as a substitute for green food as long as I can remember. The price of this book, "The Famous Grundy Method," is \$2.00.

I hardly think there is a patent on what is called the alfalfa meal; but such a patent would be as sensible as the one the "ten-cents-a-bushel" man claims to have on his sprouted oats.

SELLING SECRETS—MORE ABOUT IT.

We clip the following from the *Rural New-Yorker*:

Not a day passes that we do not receive a question about one of the many "poultry systems" so widely advertised. Some secret connected with one or the other of these "systems" is offered at from one dollar to \$10. The buyer is to sign a pledge not to reveal this great "secret" after he gets it. In one case a reader wrote for the "secret" and was informed that \$5 would buy a book giving the whole story. Now, the truth appears to be that all these "systems" contain more or less sensible information and suggestion. Most of it is old, and probably 90 per cent of it has been printed in *The Rural*. For example, great stress is laid on a cheap feed that can be made for a few cents a bushel. After you pay your money you find that this is sprouted oats. The oats are soaked in warm water, and then kept in a warm place until they start sprouts several inches long. Of course, a few quarts of oats sprouted in this way would make a bushel in bulk! We have told this over and over—and it is about all you will get as your great feeding "secret." Many a poultry-keeper who reads this will think of the good dollars of which he relieved his financial system with hopes that were like sprouted oats.

In regard to the above, some sort of book is certainly better than charging a dollar or more for the simple matter that could be put on a postal card; and I am glad to know that the secret-venders are giving us a book that contains more or less valuable matter. But this signing a pledge "not to divulge" is, it seems to me, a ridiculous piece of business. It is behind the times, and those who go into it ought to be ashamed of themselves. I have never signed any such paper, and yet I have always got all the books and secrets. When these chaps once get the money into their clutches they do not let it get away.

There is another thing that is not quite straight. Most of these systems claim they have a patent right on the arrangement. For instance, the "natural-hen incubator" man has been taking money for years for a "right" to use the idea of having a little dooryard hitched to the box that contains a sitting hen; and other venders of these books claim they have still another patent on the same arrangement; and yet our poultry-books and agricultural journals have for years past described the same thing over and over again. Their patent, or "patents applied for," are about as sensible as the patent on the churnless butter. When I read it to Mrs. Root she said she remembered seeing her mother make butter when she herself was a child, in *exactly the same way*; and my stenographer who is taking down these words says he made butter, when he was a boy, in almost no

time simply by the use of a little paddle. And while it is true that, whenever every thing happens to be just right, you can sometimes get butter in *one minute*, it is also true that it may take two hours when every thing is *not* just right.

THE "SPOUTED OATS" MAN.

There is finally at least one poultry-journal in the United States that has turned in with GLEANINGS and the *Rural New-Yorker*, and given the "feed for ten cents per bushel" some free advertising. It is the *Petaluna Cal., Poultry Journal*. Here is part of what they say:

You purchase a bushel of oats, sprout them, and you have two bushels of feed. A merchant might as well advertise "How a family can get a vegetable food at half price" by paying \$5 for a book, and then tell the sucker who purchased the book that "beans" could be soaked and boiled to double their original capacity, and would do to "fill up on," and thus be a great saving to families.

There is one mistake in the above. Instead of a bushel of oats making *two* bushels, Edgar Briggs says in his \$5.00 book that a bushel of oats will make *four* bushels of the very best kind of chicken feed.

DOSING CHICKENS WITH POWERFUL DRUGS.

Every time I pick up a poultry-journal and read about dosing with this, that, and the other vegetable or mineral poison, it makes me sick. The world is emerging from the silly notions people have about taking *poisonous* substances to make them *well*; but it would almost seem as if it were just getting to be the fashion to dose chickens in a like manner. While having this in mind it rejoices my heart to see that at least one poultry-journal is making a revolt, even if it does run the risk of losing some advertising. That one poultry-journal is one of the handsomest and best that comes to us in the way of an exchange. This publication is called *Poultry*, and is published by Miller Purvis, Peotone, Ill. Here is what they say in their issue for December:

If the poultry of this country were given proper care, a good many of those who advertise poultry remedies would be compelled to go out of business, and the poultry-press would lose a considerable portion of the income it derives from its advertising pages.

"THOU SHALT NOT STEAL."

Mr. Rood.—Will you spare a moment or so of your time to tell us what to do when local thieves steal honey from the hives at night, as they have done here lately? That you may better judge, I will say that it is not because of ill will toward myself, but is undoubtedly done by idle young men, perhaps aided by older ones. What way is best to proceed to secure evidence and to prevent future depredations? They stole a 32-lb. superful from a poor woman here who has only two colonies.

In conclusion I would say that I appreciate your department very much—perhaps more than any other in your journal. It is a real pleasure and joy to every one trying to do right to know that we have such men as edit GLEANINGS and the *Rural New-Yorker* to fight the Lord's battles and ours.

J. HOLLOPETER.

After thanking you for the high compliment you pay me by presenting this matter to the readers of GLEANINGS, I give it as my opinion that your people should all go to work and raise the moral tone of your neighborhood. First and foremost, take up a subscription for the poor woman who has only two colonies. Make good her loss; and if you give her a little more it will do no harm. Everybody who helps to lift this burden from one who is helpless will be more

interested in ferreting out the depredators. Second, I would advise your people to get to work in your State exactly as the good people are now working in Ohio to banish the saloons. The wretches who would rob a poor woman in this way are certainly a saloon product. Put the matter in the hands of your marshal or mayor; and, if necessary, have a lot of citizens sign a petition, and perhaps subscribe some money to pay the expenses of hunting up the perpetrators. Organize a law-and-order league. If you think proper, offer a reward for the one who meddled with the hives. In some States there is a very severe penalty for robbing bee-hives or poultry-houses. Ask somebody competent to give you the law in your State. This matter should meet with prompt attention all over our land—not only to protect bee-keepers but to raise the standard of morals. Perhaps you remember what I said about our neighborhood in Manatee Co., Florida. Chickens roost in open houses adjoining the open highway; and while a third of the population is colored, my neighbor Rood has never lost a chicken by theft in the whole eight years he has lived there. Let us get to work till each and every neighborhood can present as good a record as that. May God help us in our efforts to make a place here on *earth*, where "thieves *do not* break through nor steal."

FLORIDA BEE-KEEPING; HOW TO KEEP EXTRACTED HONEY LIQUID.

Right near the honey-house door, on the south side of the building, Mr. Rood has a shallow box covered with a glass sash, the box and sash being tipped so as to incline toward the sun. In this box are glass jars of honey, I think about all the year round, and this honey stays there in the hot Florida sun until it is used to fill orders. I have just been handling the jars; and although it is between 8 and 9 P.M. the jars are still almost *hot*. He says that, in the afternoon, they are often too hot to handle, but not so hot as to impair the flavor of the honey. This high temperature, with, perhaps, some other influence from the strong glaring sunlight, is almost a sure preventive against candying, even when these jars of honey stand for days and weeks on the shelves of the retailer; and the longer the honey stays in this "sterilizer" the better it becomes, because it is *thoroughly ripened*. I do not know how common this idea is for ripening extracted honey, but it seems to me every bee-keeper should use this "hot-bed" feature. The same apparatus can, of course, be used for a solar wax-extractor. The sash should be hinged so as to turn back against the wall of the building; and to save lifting, a cord and pulley should be attached so the sash can easily be swung up with one hand.

TOLERATING DRONE COMB IN THE APIARY.

Mr. Rood says few bee-keepers realize what it costs to let drone-combs (or even frames of comb containing a few drone-cells) remain in the hive year after year. He declares it is bad policy to keep such combs for the extracting-supers, especially for out-apiaries that are visited only occasionally, for the reason that such drone comb encourages undesirable swarming and probable loss of swarms.—A. I. R.]



Great Fences

AMERICAN FENCE

Made of wire that is all life and strength—wire that stretches true and tight and yields just enough under impact to give back every jolt and jam it receives.

Made of materials selected and tested in all the stages from our own mines, through our own blast furnaces and rolling and wire mills, to the finished product. Our employment of specially adapted metals is of great importance in fence wire; a wire that must be hard yet not brittle; stiff and springy yet flexible enough for splicing—best and most durable fence material on earth.

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These are combined in the American and Ellwood fences—the product of the greatest mines, steel producing plants and wire mills in the world. And with these good facilities and the old and skilled employes back of them, we maintain the highest standard of excellence possible for human skill and ingenuity to produce.

Dealers everywhere, carrying styles adapted to every purpose. See them.

American Steel & Wire Co.
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ELLWOOD FENCE

Elkhart Buggies

are the best made, best grade and easiest riding buggies on earth for the money.

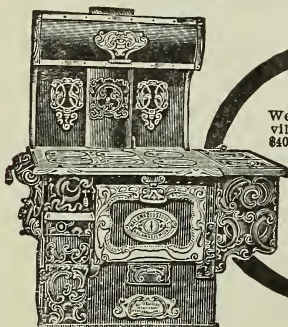
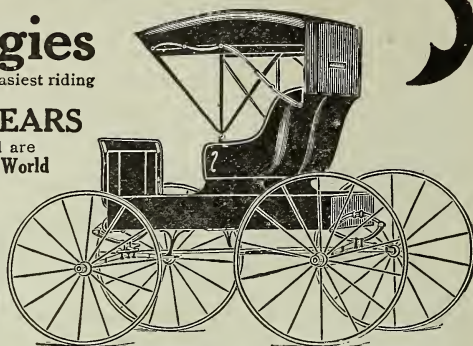
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"A Kalamazoo Direct to You"

TRADE MARK REGISTERED

We have more than 100,000 satisfied customers in more than 17,000 cities, villages and towns in the United States who have each saved from \$5 to \$40 by buying a Kalamazoo stove or range on

360 DAYS APPROVAL

direct from our factory at actual factory prices. No stove or range has a higher reputation or gives better satisfaction. You run no risk. You save all dealers' profits. We pay the freight.

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and see list of towns where we have satisfied customers.

Kalamazoo Stove Company, Mfrs., Kalamazoo, Mich.

Our patent oven thermometer makes baking and roasting easy.



Planet Jr.

A practical farmer wanted to get bigger crops with less labor—and he invented the Planet Jr. It did better work and saved two-thirds his time. Now he makes Planet Jr. Seeders, Wheel-Hoes and Cultivators for two million farmers and gardeners. Made to last and fully guaranteed.

No. 8 Planet Jr. Horse Hoe and Cultivator will do more things in more ways than any other horse hoe made.

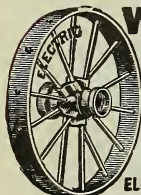
Write today for our 56-page free 1909 catalogue, which tells all about 45 kinds of Planet Jr. implements.
S. L. Allen & Co., Box 1106 S., Philadelphia, Pa.



No. 8.



No. 25 Hill and Drill Seeder, Double Wheel Hoe, Cultivator and Plow combines almost every useful hand-garden tool in one strong, light, easy-running, simply adjusted implement.



WAGON SENSE

Don't break your back and kill your horses with a high wheel wagon. For comfort's sake get an

Electric Handy Wagon.

It will save you time and money. A set of Electric Steel Wheels will make your old wagon new at small cost. Write for catalogue. It is free.

ELECTRIC WHEEL CO., Box 95, Quincy, Ill.

15 Cents a Rod

For a 22-inch Hog Fence; 16¢ for 26-inch; 19¢ for 31-inch; 23 1/2¢ for 34-inch; 27¢ for a 47-inch Farm Fence. 50-inch Poultry Fence 37¢. Lowest prices ever made. Sold on 30 days trial. Catalog free. Write for it today.

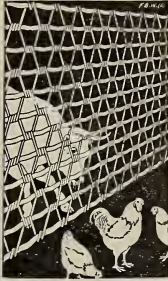
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Box 21, MUNCIE, IND.

FENCE 13c Up Per Rd.

Get our 1909 prices on any style fence. We sell direct, you get all dealers' and jobbers' profit when you buy direct from our factory. Write at once, **Anchor Fence & Mfg. Co., Dept. V, Cleveland, O.**

CUTS USED IN THIS MAGAZINE ARE FROM
THE MUGLER ENGRAVING CO.
MUGLER BLDG. CLEVELAND, OHIO.

Strongest Fence Made



When you buy our **High Carbon Coiled Spring Fence** you buy strength, service and durability combined. Twenty years of experience—hard knocks, taught us that the best fence is made from heavily galvanized **Coiled Spring Steel Wire**

CLOSELY WOVEN FROM TOP TO BOTTOM

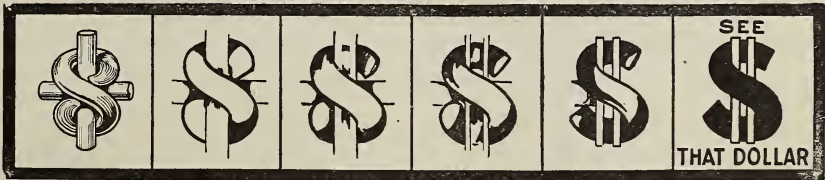
Our Fence is so closely woven that small pigs cannot "wriggle" through it. So strong the vicious bull cannot "faze" it. We have no agents and do not sell to dealers but sell direct to the user

AT WHOLESALE PRICES FREIGHT PREPAID

Coiled Wire provides for expansion and contraction and prevents sagging between posts. Every pound of wire used in the construction of our fences is made in our own mill from the best high carbon steel obtainable. We give

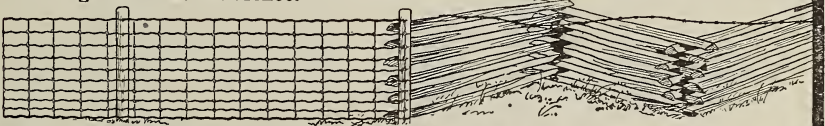
30 DAYS FREE TRIAL that our customer may be sure they are satisfied. We make a full line of **FARM AND POULTRY FENCE**. Our wholesales prices will save you money. Catalog Free.

COILED SPRING FENCE COMPANY
BOX 101 WINCHESTER, INDIANA.



Anthony knots to the Farmers Mean Dollars

There is just about as much difference between Anthony woven wire fence and some other wire fences as between Anthony fence and the old "Virginia Worm" rail fence.



You Can Compare ANTHONY with any Fence

The decision is always in favor of Anthony Fence. Never in the history of fence making has a tie been used in construction that is so perfect as the Anthony knot which is used exclusively in Anthony fence—

no other. The knot is made from tough wire, same

size as the line wire, will not come off, and leaves no kink in line wire inside knot. No possible damage

to stock, nor loss of wool from sheep from an

Anthony knot—it is smooth, compact, strong.

Nothing but the highest grade of heavily galvanized,

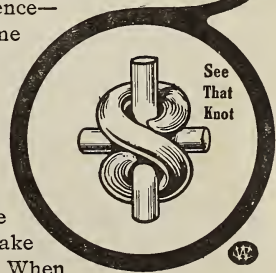
hard spring steel wire; and every bundle of it is rigidly

inspected and the fence made from it is given a like

inspection. We buy the best wire we can get. We make

the best fence we know how—and we **know how.** When

you have your farm fenced with Anthony fence your fence troubles are over.



FREE SAMPLE: Shows the Anthony Knot in actual service—just as it is in the fence. The hand sample measures about 3 inches square

and not only shows the Anthony Knot but shows heavy top wire and

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mail you a sample, with our Booklet. When a man sees Anthony

fence he at once recognizes its worth. That's why we want

to mail you a sample. Ask for it today.

Gentlemen: I am interested in your fence. Please send sample and booklet.

The Anthony Fence Co.,

26 Michigan St.,

Tecumseh, Michigan, U.S.A.

Name

Postoffice

County State

The Anthony Fence Co.,

26 Michigan St.,

Tecumseh, Mich.

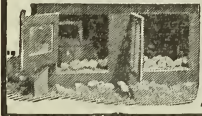
Prairie State INCUBATORS

hatch strong, livable chicks and ducks most successfully. Perfect regulation of heat automatically controlled.

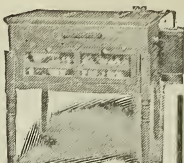
The Sand Tray Diffusion Incubator is the most advanced in every particular and is guaranteed to do the work for you economically.

Piano-Box will do for Brooder

Put our Universal Hover into it and make your own brooder. The Universal Hover may be attached to any form of colony-house, mushroom-house, small portable building or piano box and makes about as good a brooder as money can buy. Ask for Free Catalog. Address

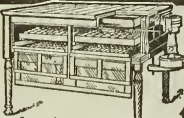


Prairie State Incubator Co.,
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Ertel's POULTRY DIARY

is our new book for the use of poultry raisers. Keep account of your eggs, chicks and profits. Our Diary shows how and also tells about our new incubators. It tells why our prices are so low. The Diary is free. Better write for it today. Tell us if you are thinking of buying an incubator and what size you want. We pay freight. Geo. Ertel Co., Quincy, Ill.



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sixty prominent varieties. 10c postpaid. Fine, pure-bred stock and eggs at low prices. GREIDER'S GERMICIDE—a sure preventive and an excellent disinfectant. B. H. GREIDER, Rheims, Pa.

Concise, practical. How to make money with poultry: information as to buildings, treatment of diseases, etc. Fifteen attractive chronos.

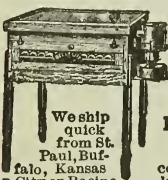


Ideal The Low Priced Standard Incubator

25 years of experience in it. Tried and proven. Makes results certain. Send for great free book, "Poultry for Profit." 128 pages, practical, reliable. Worth dollars for fine pictures alone. Free. Send today to



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\$7.55 Buys the Best 140-Egg Incubator ever Made

Freight Prepaid

We ship quick from St. Paul, Buffalo, Kansas City or Racine

Double cases all over; best copper tank; nursery, self-regulating. Best 140-chick hot-water Brooder, \$4.50. Ordered together \$11.50. Satisfaction guaranteed. No machines at any price are better. Write for book today or send price and save waiting.

Belle City Incubator Co., Box 69 Racine, Wis.



48 BREEDS Fine pure-bred chickens, ducks, geese and turkeys. Northern raised, hardy, and very beautiful. Fowls, eggs, and incubators at low prices. America's greatest poultry farm. Send 4 cents for fine 80-page 15th Annual Poultry Book. R. F. NEUBERT, Box 778, Mankato, Minn.

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Save money. Thousands are doing it every year. I teach you how and supply all the parts you cannot make, at low prices. My New Lampless Brooder will cost you \$4.00. Greatest Brooder invention of the age. Repairs and supplies for all kinds of Incubators or Brooders. My new book of plans and catalogue has over 100 illustrations, showing step by step every stage of construction—so simple a 12 year old boy can follow them. Send 25c coin or U. S. stamps to cover cost. Your money back if you are not satisfied. I allow the price of the book on your first order. Send for the book today. It means Dollars to you. H. M. SHEER, 373 Hampshire St., Quincy, Ill.



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That is what we guarantee you can do with the

Invincible Hatcher

Try it and if it don't produce more strong, healthy chicks than any other incubator, regardless of price, send it back. 50-Egg Size Only \$4.00. Same low prices on larger Hatchers, Brooders and Supplies. Write for 176-page FREE catalogue.

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World's Best Incubator

Has stood all tests in all climates for 15 years. Don't experiment, get certainty. Get a

SUCCESSFUL

Incubator and Brooder. Anybody can operate them and make money. Let us prove it to you. Booklet, "Proper Care and Feeding of Chicks, Ducks and Turkeys." 10c. Poultry paper, 1 year, 10c. Write for free catalog. Des Moines Incubator Co., 190 2nd St., Des Moines, Ia.



125 Egg Incubator and Brooder Both For \$10

If ordered together we send both for \$10 and pay freight. Well made, hot water, copper tanks, double walls, double glass doors. Free catalog describes them. Wisconsin Incubator Co., Box 56, Racine, Wis.



Hatch Chickens by Steam

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Incubators assure big hatches. Well-built, reliable, practical—thousands in use. Catalogue free.

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Now that the Fire Insurance Companies have laid down Rules you are not safe in buying any incubator that does not bear the Insurance Label. Our Free 212-Page Book explains. Address Nearest Office.

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hatch big profits. The Reliable Incubator hatches chubby chicks. Write today for our Free, interesting, illustrated Poultry Book, which will instruct you in every branch of poultry raising and tell you how the Reliable has smashed World's hatching records continuously for the last 12 years.

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Let this Free Book tell you how to double your Potato Money



You can learn of the one way to plant your potatoes cheapest, how to save seed and soil, how to double the profit of every acre of your potato land.

You can get this book free for your name on a postal card. It will tell you all about the proper care of potato fields, proper methods of planting and cultivation, how to save hundreds of dollars in fertilizer money alone.

It will tell you how to do all this at a cost of but one dollar. It will describe the one planter that makes this all possible—the famous Acme Hand Planter. It will place in your hands all the great, vital truths of Potato Culture, condensed and plainly written, so it is easy to read and remember them.

You will want this book to put its precepts into practice on your own farm. Send for it now, just say on a postal, "Send me your potato book."

POTATO IMPLEMENT COMPANY,
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FRUIT-TREES

NOW is
the time
to make
your selection

and order your fruit-trees—while the nurseries have a full stock to select from. **Call's Nurseries, Perry, O.,** have a large stock of the best quality at reasonable prices. They deal direct with the farmers. Write them for price list.



43—leading varieties of pure bred Chickens, Ducks, Geese, Turkeys; also Holstein cattle. Prize winning stock. Oldest and largest poultry farm in the northwest. Stock, eggs and incubators at low prices. Send 4 cents for catalog. Larkin & Hersberg, P.O. 25 Mankato, Minn.

LOTS OF EGGS



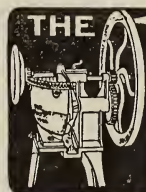
If you feed raw bone fresh cut. Its egg producing value is four times that of grain. Eggs more fertile, chicks more vigorous, broilers earlier, fowls heavier, profits larger.

Mann's Latest Model Bone Cutter

Cuts all bone with adhering meat and gristle. Never clogs. **10 Days' Free Trial.** No money in advance. Send today for free catalog. **F. W. MANN CO., Box 37 MILFORD, MASS.**



All leading varieties pure-bred chickens, ducks, geese, turkeys, pea-fowls, incubators, supplies, collie dogs. Send 4c for large poultry and Inc. book. **J. J. BRENNER, D. 12, Mankato, Minn.**



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Send for our free pamphlet, "How to Make Big Money Raising Squabs." Our birds are supreme. You raise the squabs and we furnish you the customers'.

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Don't let this time go by without sending me your name and address for my Big New 200-page Poultry Book with over 1,200 pictures. I've got great news for you this year. Old Trusty is metal encased Redwood and **absolutely safe** top, sides, ends, bottom, legs and all. Certain and Sure. 75% better hatches guaranteed. Practically runs itself. So don't pay two prices for any other when my prices are even lower than last year and you can take **40, 60 or 90 Days' Trial** (enough for 3 hatches) with **Freight Prepaid** to you (east of the Rockies) on my



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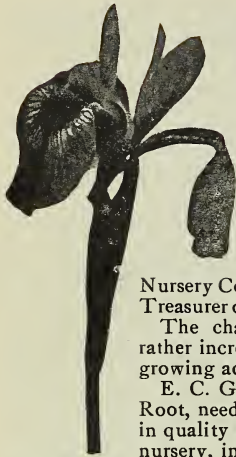


M. M. JOHNSON
Incubator Man

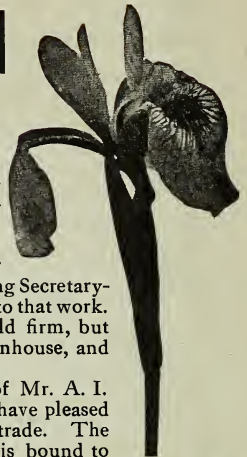
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M. M. JOHNSON, Incubator Man, CLAY CENTER, NEB.



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The hundreds of GLEANINGS readers who are regular customers of the above well-known seed-house will be pleased to learn of a recent change. The entire seed business of E. C. Green & Son has been consolidated with that of the Wooster Nursery Co., the junior member, Stephen N. Green, becoming Secretary-Treasurer of the Nursery Company, devoting his entire time to that work.

The change detracts absolutely nothing from the old firm, but rather increases their facilities greatly. Better office, greenhouse, and growing accommodations are already in operation.

E. C. Green & Son, as successors to the seed business of Mr. A. I. Root, need no introduction in this magazine. That they have pleased in quality and price is proved by their rapidly increased trade. The nursery, incorporating as it does the seed and tree trade, is bound to win confidence of GLEANINGS readers because of its unexcelled location and management. It owns and operates a large nursery (adjoining the grounds of the Ohio Agricultural Experiment Station), devoted exclusively to high-class nursery and seed-growing, operated upon the most modern methods.

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Our Catalog now ready. Tells about our seeds and nursery stock. Fully illustrated with lovely half-tones from original photographs. A beautiful cover design. Seeds for the garden, honey-plants; fruit, forest, and ornamental trees fully described. We aim to tell the plain truth, both in words and cuts. We explain why our stock is superior to others. Read the offer in next column and act quickly.

A New Tomato. We have just fifty package of a fine new tomato which will go to the first fifty replies to this ad. Mr. Green sold last season a new tomato to a Philadelphia seedhouse that brought the highest price ever actually paid for a novelty of this kind. The seed we will send you, you may rest assured, is worth trying. Better write us a postal to-day for our catalog, and get a package of this seed free.

THE WOOSTER NURSERY CO., WOOSTER, O.

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Ratekin's Big Banner 100-Bushel White Oats—The biggest, prettiest, plumpest oat in existence. Side by side with common sorts they yield 100 bushels per acre where other sorts make but 25 to 35 bushels. Strong stiff straw; sprangled heads; ripens early; never rusts, blights, or lodges. **There is none like them,** and when our stock is exhausted there is no more to be had. **6 samples Mailed Free.** Also our Big Illustrated Catalog of farm, field, grass, and garden seeds. A postal card will bring them S cur door. Address **RATEKIN'S SEED-HOUSE, Shenandoah, Iowa.**

10 Grapevines \$1.00 Sent Postpaid

Strong, Hardy, Two-Year-Old Vines

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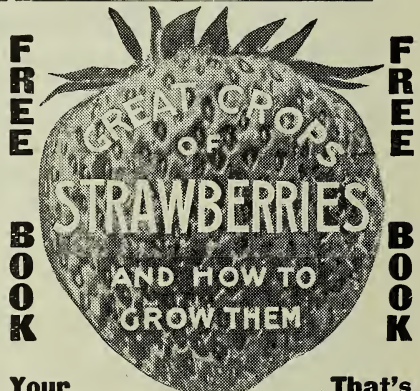
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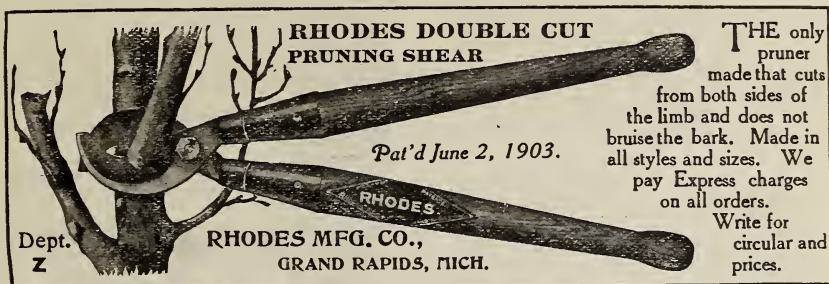
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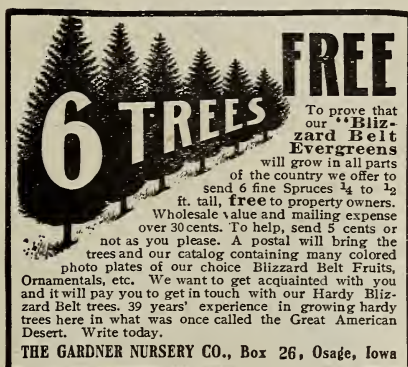
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J. P. MOORE, Queen-breeder, Morgan, Ky.

FOR SALE.—Clover and amber honey. Table quality. Write for prices, stating your needs.

C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE.—Comb honey, either car lots or less, both alfalfa and sage. Extracted honey, white, in 60-lb. cans. Samples furnished upon application.

C. C. CLEMONS PRODUCE CO., Kansas City, Mo.

FOR SALE.—Honey by the barrel or case—extracted and comb; a bargain in honey. Write now.

JOHN W. JOHNSON, Box 134, Canton, Mo.

FOR SALE.—8000 lbs. fine extracted white-clover honey; also 4000 lbs. light amber, all in 60-lb. cans, at $7\frac{1}{2}$ cts. per lb.

S. E. ANGELL, Harpers Ferry, Iowa.

FOR SALE.—Fine extracted white-clover honey; also light amber fall honey, put up in barrels, 60-lb. and 10-lb. cans. Write for prices.

DADANT & SONS, Hamilton, Illinois.

FOR SALE.—24 gallons of strained white-clover honey in two-gallon packages, $7\frac{1}{2}$ cts. per lb., f. o. b. Fremont, O.

K. O. SMITH, Gibsonburg, Sandusky Co., O.

Help Wanted

WANTED.—An experienced bee and poultry man. Give full particulars in first letter as to age, whether married or single, experience in farming, poultry, and bees; also state salary wanted. Give references, and say at what date services could begin.

BLALOCK FRUIT CO., Tenth Sts., Walla Walla, Wash.

WANTED.—Single man to take charge of 500 colonies of bees—one who understands running for comb honey and working outyards. Employment the year round. Services required with other duties when not busy with bees. State wages expected, board furnished.

W. P. SMITH, Penn, Lowndes Co., Miss.

WANTED.—Young bee-men with some all-around experience to advance this business as a science. After the first season I will let bees on shares; at the end of one month's work, if agreeable to both parties I will sign a contract for eleven months more. Do not reply unless you are determined to stick to this business.

C. I. GRAHAM, Exeter, Tulare Co., Cal.

WANTED.—Queen-breeder for wages or on shares.

JOHN W. PHARR, Berclair, Texas.

Wants and Exchanges

WANTED.—To exchange an Anthony 5x8 view camera, with tripod and all supplies, in best of condition, for honey-extractor and uncapping-can in good condition.

WM. H. ROBINSON, Rt. 7, Lafayette, Ind.

WANTED.—400 colonies of bees in California or Texas.

DR. GEO. D. MITCHELL & CO.,

340 Fourth Street, Ogden, Utah.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price.

OREL L. HERSHISER,

301 Huntington Ave., Buffalo, N. Y.

WANTED.—200 stocks or less of bees within 150 miles of De troit.

A. W. SMITH, Birmingham, Mich.

WANTED.—Coon-hound pups for supplies or offers.

G. M. WITHROW, Buffalo, Ill.

WANTED.—In eastern Iowa, 200 colonies of bees on shares for 1909.

Lock Box 312, Postville, Iowa.

Bees and Queens

FOR SALE.—Moore's strain and golden Italian queens, untested, \$1.00; six, \$4.00; twelve, \$7.00. Carniolan, Banat, and Caucasian queens, select, \$1.00; six, \$5.00. Tested, any kind, \$1.25; six, \$6.00. Choice breeding queens, \$3.00 each. Circular free.

W. H. RAILS, Orange, Cal.

FOR SALE.—1000 colonies of bees with fixtures; run principally for extracted honey.

DR. GEO. D. MITCHELL & CO.,

340 Fourth Street, Ogden, Utah.

FOR SALE.—300 nuclei with good queens for spring delivery. Place orders now, and know you get them.

D. J. BLOCHER, Pearl City, Ill.

FOR SALE.—Apiaries and queen-rearing business in Southern California. Full particulars on request to

E. M. GRAVES, Ioamosa, San Bernardino Co., Cal.

FOR SALE.—70 colonies of bees; 40 acres of land, river front. Call or write.

L. K. SMITH, Grant, Fla.

Situation Wanted.

WANTED.—Situation. I have put in 14 straight years of up-to-date bee culture; am able to take charge of large interests; am 36 years old, strictly temperate; wish to work on shares if possible.

Address A. LANZ, Fairmont, Los Angeles Co., Cal.

WANTED.—Position by young man, age 23, in queen-rearing yard for the busiest part of the season. Experienced in honey production. Best of references. Can come at once.

PAUL MICKWITZ, Medina, O.

Photographs.

Send me your photograph and see what nice pictures I will make you from it. Cabinet size, \$2.00 per dozen; 6 for \$1.50. Satisfaction guaranteed.

M. F. DECKER,

Lock Box 34.

New Florence, Pa.

Honey and Wax Wanted

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.

R. A. BURNETT, 199 South Water Street, Chicago, Ill.

WANTED.—25 tons of fancy comb honey. Write, stating particulars, to C. M. CHURCH, New Kensington, Pa.

For Sale

FOR SALE.—6000 $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$ plain sections; 1500 $4\frac{1}{4} \times 1\frac{1}{2}$ beeway; 1500 $4\frac{1}{4} \times 1\frac{1}{2}$ beeway; 50 metal-jacketed five-gallon cans; 20 cases of two five-gallon cans; one Seneca Falls buzz-saw; one extra-fine specimen of straw hive; 12 eight-frame L. hives with deep covers; 25 chaff hives or winter cases; 4 1400-lb. galvanized tanks; 25 lbs. medium brood foundation; 80 lbs. thin surplus foundation. All bargains located at Syracuse, N. Y.
F. W. LESSER, 104 Pearl St., Johnstown, N. Y.

FOR SALE OR EXCHANGE.—One Stewart sheep-clipping machine with knife-grinder, 1905 model; one horse-clipper, 1900 model; one Hoosier broadcast seeder with grass-seed attachment; will take in exchange standard bee-fixtures, extractor, honey, or offers.
L. F. WEAVER, Dexter, Mo.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Melilotus (sweet clover) seed for sale at 8 cts. per lb. Write for catalog and particulars.
W. P. SMITH, Penn, Miss.

FOR SALE.—300 thoroughbred strawberry-plants for \$1.00. Standard varieties. Write to T. M. PALMER, Bidwell, Ohio.

FOR SALE.—One ten-inch Root foundation-machine, good as new. Price \$20.00. F. C. MORROW, Rt. 1, Blevins, Ark.

Great bargains in trees, shrubs, and plants. Send a postal for free catalog. WEST SIDE NURSERY AND FRUIT FARM,
Postville, Iowa.

FOR SALE.—The Young comb-honey cutter for putting up comb honey in sealed containers. Send for booklet.
W. J. YOUNG, Arecibo, Porto Rico.

FOR SALE.—Sweet-clover seed, 15 cts. per pound, postage extra. Root's supplies. ANTON G. ANDERSON, Holden, Mo.

FOR SALE.—Danzonbank comb-honey hives and other bee-supplies. Write for prices. ROBT. INGRAM, Sycamore, Pa.

FOR SALE.—Bee-supplies at factory prices.
D. COOLEY, Kendall, Mich.

FOR SALE.—Remington type-writer No. 7, good as new. For particulars address Box A, Gleanings in Bee Culture, Medina, O.

Shirtwaist Studs.

No more lost buttons when removable studs are used. Three styles—pearl button, and plain or Roman gold. Guaranteed 14 karat gold-filled. Postpaid, 75 cts. for set of three.
H. H. BRAINARD, Medina, O.

Poultry Offers

FOR SALE.—Brown Leghorn, B. P. Rock, S. L. Wyandotte eggs; \$1.00 to \$1.50 per 15. Raised on separate farms. Write for full particulars. F. C. MORROW, Rt. 1, Blevins, Ark.

Eggs for setting, from pure White Wyandotte chickens; 15 for \$1.00; \$5.00 per 100. CECIL REPINE, La Otto, Ind.

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

New Temperance Post Cards.

Sixty original designs of intrinsic worth and beauty. Valued beyond price by every lover of home and humanity. They contain brilliant temperance sentiments, richly illustrated; will offend no one. Every friend of temperance and good morals, and every boy and girl, will surely want these incomparable cards. Price—60 post cards, all different, 40 cts.; 40 for 30 cts. 20 for 15 cts., all prepaid. Agents wanted at every postoffice. Sixty "Cheer" post cards, real gems, same price. Seed catalog and premium coupon free with all orders. Special.—Order at once and I will add free a nice present for wife, sister, or sweetheart.
A. T. COOK, Seedsman, Hyde Park, N. Y.

Bee-keepers' Directory

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

Italian queens from direct imported mothers, red-clover strain, \$1.00. Circular. A. W. YATES, 3 Chapman St., Hartford, Ct.

Golden yellow Italian queens my specialty; 1909 price list ready. Safe introducing directions. E. E. LAWRENCE,
Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to
T. F. BINGHAM, Farwell, Mich.

ITALIAN BRES, queens, honey, and Root's bee-keepers' supplies.
ALISO APIARY, El Toro, Cal.

Golden-all-over and red-clover Italian queens; circular ready
W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 75 cts.; select, \$1.00; tested, \$1.25 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

Quirin's famous improved Italian queens ready in April; nuclei and colonies about May 1. My stock is northern bred, and hardy. Five yards wintered on summer stands without a single loss in 1908; 22 years a breeder. Honey for sale.
QUIRIN-TH-QUEEN-BREEDER, Bellevue, O.

Breeding queens of pure Caucasian and Carniolan races—price \$3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

BOOK REVIEWS.

THE AMERICAN APPLE ORCHARD.

Mr. F. A. Waugh, who is so well known by his books on fruit culture, has done us another good service by producing for our edification a book about apples, bearing the above title. The volume is of a moderate size and at a moderate price, and yet it contains practically all the important facts on apple-growing. There have been much larger works on apples gotten out, but these were mainly to suit one locality, whereas this one covers the entire country; yet Mr. Waugh knows his subject so well that he has succeeded in producing a book that will probably be satisfactory in any locality in the United States, Canada, and Mexico. The writer feels sure Mr. Waugh is a true and sound guide, more particularly in the selection of varieties, which is always a difficult matter with writers on the apple.

The matter of the preservation and storage of fruit is ably dealt with; but this was to be expected, because the author is probably the best authority in the world on this very subject. The selection of soils suitable to apple culture is a wide and interesting subject, and yet it is very fairly treated here as far as limited space will allow.

Though the book was written mainly to suit the eye of the commercial fruit-grower, there is a chapter allotted to the family orchard, which is interesting reading, worth more to the average farmer than the cost of the book. We judge this book will at once take its place as a standard authority on American apple-growing, and have a wide sale accordingly. The publishers are the Orange Judd Co., but it may be ordered from this office at the published price, \$1.00 postpaid.

MCCALL'S "PHYSICAL PROPERTIES OF SOILS."—ORANGE JUDD CO.

This is a schoolbook on the mechanics of the soil, written for the use of students in agricultural colleges. It has to do with a little-understood subject, more particularly by farmers, who should certainly know the rudiments of soil mechanics. This book is not intended, however, as a guide to those who desire to study the subject at home, but is simply a laboratory textbook. For this purpose it is admirably adapted and arranged, there being blank pages for students' notes. This greatly facilitates reference, and is superior to the old plan of having a separate book for notes. This book has been prepared by a practical teacher of soil physics, Prof. A. G. McCall, of the Ohio State University, where the teaching of agriculture is considered to be of a high character. This alone should insure proper recognition for this work by educators elsewhere. Price 50 cts. postpaid. We can supply it from this office.

SPECIAL NOTICES

By OUR BUSINESS MANAGER

By an unfortunate oversight we omitted to state in our issue for January 1 that our illustrations of a forest fire and its effects were copied by permission from *Forest Leaves*, of Philadelphia, Pa., a very bright and interesting publication devoted to forestry.

RUBBER STAMPS.

On account of the numerous inquiries received from our readers we have prepared an extensive catalog of rubber stamps and all accessories as well as inks, stencil letters, seals, etc. If interested ask for catalog No. 14.

HONEY.

We have on hand at Medina and Chicago fair stocks of extracted and comb honey, on which we can make low prices for fine stock, as we desire to reduce the same on account of our time being so occupied with our regular bee-supply work from now on.

ALSIKE-CLOVER SEED.

If any of our readers have a stock of choice alsike-clover seed to sell we should be pleased to hear from them, mailing a sample, and stating how many bushels they can furnish, and the price asked. We have some seed on hand, but not enough to supply our needs.

EXTRA-SIZE SIMPLEX JARS.

For those who prefer a jar holding 18 oz. of honey we offer 25 cases of extra-size Simplex jars, 2 dozen to a case, free on board Worcester, Mass., at \$1.10 per case, or the lot for \$26.00. We have none of this size in stock here, and offer these subject to previous sale.

SIX-FRAME COWAN EXTRACTOR.

We offer a six-frame Cowan reversible extractor, which has been used in all about 30 days, and is practically as good as new, and now located in Central Florida, for \$12.00—about two-fifths of the price of a new machine of this size. Of course, it is old style, but it ought to be a bargain to some one at this price.

THE A B C OF BEE CULTURE.

Hundreds of illustrations; 536 pages; carefully indexed, and valuable both to the beginner and expert bee-keeper. Read the following unsolicited opinions of the book:

The A. I. Root Co.—Your A B C of Bee Culture is received, and I wish to say it reminds me of a \$10.00 edition instead of \$1.50. Comparing it with other books in my library I can not find a book on horticulture equal to it in binding, paper, illustrations, and index but cost me from seven to twelve times the amount I paid you for this work. You certainly deserve a whole lot of credit for the pains you have taken in getting out this work.

Please find inclosed a check for GLEANINGS for five years.

Wishing you the compliments of the season I remain

Very truly yours,

Miamisburg, O., Jan. 16, 1909.

S. E. WATERS.

The A. I. Root Co.—Your A B C and X Y Z of Bee Culture is at hand. I was surprised to see such a nice big book. I would not part with this book for \$100 if I could not get another. I must thank you for it.

EMIL J. ZUNKER.

Fennville, Mich., June 22, 1908.

The A. I. Root Co.—I received a few days ago a copy of the A B C of Bee Culture. It is a wonderful book, because it is a book of wonders. It is a complete up-to-date encyclopedia on the subject of God's most wonderful insects. The book becomes a very valuable contribution to America's marvelous products, in that it is a development and not a theory. It is the crystallized essence of a long, useful, and loving life. One can hardly understand how you can issue such a monumental work, containing so many excellent modern cuts, and 1100 columns of most helpful reading-matter for the small sum of \$1.50, when such specialized subjects cost from \$5.00 to \$10.00 per copy. I have a thousand books in my library; but aside from the Bible I prize it most.

E. R. WAGNER.

Cincinnati, O., Jan. 28, 1908.

PRICES.

Cloth-bound, - - - - -	\$1.50
Half leather, - - - - -	2.00
Full leather, - - - - -	2.50
German edition, paper covers, - - - - -	2.00
cloth-bound, - - - - -	2.50
French edition, cloth-bound, - - - - -	2.00
Postpaid to any country in the world.	

BEESWAX WANTED.

The market for beeswax seems to be improving, as very often occurs at this season of the year. As spring approaches, it becomes more plentiful. We offer for prompt shipment 29 cents cash, 31 cents trade, for average wax delivered here. It takes about five to ten tons a month to keep us supplied in making foundation, and we prefer our American wax to that which is imported. If you have any to furnish, let it come forward, and be sure to mark the shipment so we may know who the shipper is. Write at the same time, sending shipping receipt, and a letter giving gross and net weights shipped.

LARGE SALE OF HONEY-EXTRACTORS.

Notwithstanding the increased price of our extractors because of increased cost due to improvements they seem to be appreciated, judging from sales. Shipments in January are nearly three times what they were a year ago in January. The demand for the larger sizes increases, while we do not supply quite as many of the small machines as we did years ago, before we were prepared to furnish such large machines. The sale of power outfits continues, and would be still greater if those who produce large crops of extracted honey realized what a convenience and labor-saver they are.

DANZ. SUPERS WITH H-S M FENCES.

We still have at Floresville, Tex., for sale 60 Danz. supers with section-holders and Hyde-Scholl M fences, no sections, nailed and painted, and somewhat discolored from use, which we offer at \$20.00 for the lot, or 40 cts. each for 10 or more in a shipment; also 400 shipping-cases in flat for 20 Danz. sections, put up 50 in a crate, which we offer at \$5.50 per crate of 50; \$40.00 for the lot of 400. Here, surely, is a bargain for any one not too far removed from Texas, if in need of Danz. ten-frame supers or shipping-cases. The shipping-cases are in the crates in which they were packed at the factory; new unused goods, at two-thirds regular price.

NEW PRICES ON SWEET-CLOVER SEED.

This has some valuable traits, as standing frost and drouth, and in some localities it is the main honey-plant. About 4 lbs. of the hulled seed, or 8 to 10 lbs. with the hulls on, are needed for an acre. It will grow on almost any barren hillside, but it is never a bad weed to exterminate. If it is mown down to prevent seeding, the roots will soon die out. Sow in spring or fall. In the vicinity of Salt Lake, Utah, sweet clover is the main honey-plant, and the quality of the honey is equal, in the opinion of many, to any in the world. The plant lives through the dry summers in Utah. See "leaflet" about sweet clover, sent free on application.

We have on hand a good stock of choice white-clover seed, both white and yellow. Of the white we have both hulled and unhulled seed, and of the yellow we have at present about 250 lbs. hulled, and have engaged a lot of unhulled yellow which is expected soon. It is usually difficult to supply the entire demand for unhulled white and yellow, and we suggest immediate orders to be sure of getting from our present stock. Prices are:

In lots of.....	1 lb.	10 lbs.	25 lbs.	100 lbs.
Unhulled white, per lb.	.15	.13	.12	.11
Hulled white, per lb.	.22	.20	.19	.18
Hulled yellow, per lb.	.22	.22	.19	.19

These prices are all subject to market changes.

SECOND-HAND COMB-FOUNDATION MILLS.

We have to offer the following list of comb-foundation mills, which have been used but are in good condition to use, by one who wants to make his own foundation and is not particular about slight defects in the cell faces. Samples from these machines will be mailed to those interested on application.

No. 075.—2x9-inch round-cell, medium-brood mill in fair condition. This is a very old pattern, made about thirty years ago; has been kept in good shape. Price \$10.00.

No. 079.—2½x6 hex. cell extra-thin-super mill in good condition; bargain at \$12.

No. 084.—2x10 round-cell medium-brood mill in fair condition. Price \$12.00.

No. 085.—2½x6 hex. cell thin-super mill in very good condition. Price \$12.00.

No. 086.—2½x6 hex. cell extra-thin-super mill in excellent condition. Price \$15.00.

No. 092.—2½x6 hex. cell extra-thin-super mill in extra good condition. Price \$15.00.

No. 0100.—2½x6 hex. cell extra-thin-super mill in good condition. Price \$10.00.

No. 0102.—2½x6 hex. cell extra-thin super mill in good condition. Price \$10.00.

No. 0103.—2½x10 hex. cell medium-brood mill in fine condition. Price \$18.00.

No. 0104.—2½x10 hex. cell medium-brood mill in good condition. Price \$16.00.

No. 0105.—2½x10 hex. cell light-brood mill in fair condition. Price \$10.00.

THE A. I. ROOT COMPANY, MEDINA, OHIO.

REMOVAL SALE.

We are obliged to move our Chicago warehouse to new quarters, as the owners of the building where we have been located for the past six years want for their own use the space we have been using. We offer some goods from our Chicago stock at a reduction in order to close them out rather than move them.

100 one-gallon maple-syrup cans with $\frac{3}{4}$ -inch screw. Price \$9.00.

250 half-gallon maple-syrup cans with $\frac{3}{4}$ -inch screw, at \$7.00 per 100.

100 half-gallon maple-syrup cans with 2-inch screw, at \$7.25 per 100.

One second-hand German wax-press in good condition, offered for \$7.00.

Several No. 4 Novice extractors without ball bearings, offered at \$7.50 each.

Two No. 10 Novice extractors without ball bearings, offered at \$8.50 each.

One Boardman solar wax-extractor, \$6.00.

400 Jumbo frames, $11\frac{1}{2} \times 17\frac{1}{2}$, thick top, staple-spaced, offered for \$10.00 for the lot or \$2.80 per 100.

1000 thick-top staple-spaced L. size frames at \$2.40 per 100, or \$20.00 for the lot.

20 crates all-slatted bushel boxes at \$2.00 per crate, or \$18.00 for the lot.

17 crates galvanized bound bushel boxes at \$2.40 per crates.

120 winter cases for eight-frame hives (YZ—8), in lots of 5 at \$1.00.

Convention Notices.

The bee-keepers of Armstrong, Clarion, and Jefferson counties will meet in the Athletic Building, New Bethlehem, Pa., Thurs., Feb. 25, 1909, at 9 A.M. and 1 P.M. Our motto: "Keep better bees, and keep bees better." The opening address will be by Rev. A. J. Meek. The following topics will be discussed:

1. Best Results from Least Outlay in Money and Labor.—I. F. Miller; 2. Is Swarming a Result of Condition or Disposition?—D. J. Hetrick; 3. Black or Foul Brood.—George H. Rea; 4. Suggestions on Honey-plants.—Levi Schieckengost; 5. Spring and Fall Feeding.—J. E. McPherson; 6. Suggestions on Marketing Honey.—E. A. Hull; 7. Question-box. COMMITTEE.

The annual convention of the Wisconsin State Bee-keepers Association will be held in Madison, February 16 and 17, at the court-house, beginning at 10:30 Thursday morning.

It is the intention of the association to have a banquet, or social gathering, the evening of the last day, and definite arrangements will be made at the first morning's session. It is hoped and expected that all members, so far as possible, will bring their ladies. This was the wish of the last convention, and many members at that time agreed to if possible.

The Executive Board wish to make this the best convention ever held by this association, and for this purpose ask all members to take an active interest, even if they can not attend.

We want every member and all bee-keepers to send us good questions, or come prepared with questions, as the question-box will be the main feature of the convention.

We also ask those of you who are interested in any particular subject or question to write a short paper on the same, with the view of bringing out a thorough discussion.

Let each of you make it a point to give something of general interest, the discussion and answering of which will teach us something.

If those of you who can contribute either questions or papers, or both, will advise the secretary, we will try to prepare a regular program, for distribution prior to the time of meeting; but remember that the question-box and the social part will be the main features.

N. E. France will give us a talk entitled "Improvements to date to make work easier and more profitable."

We invite every member to renew his membership. We invite every bee-keeper to become a member.

Annual dues for the Wisconsin State and National, \$1.00 for both, or you may become a member of the Wisconsin State alone by sending 50 cts. to the secretary. Be sure to let us hear from you, together with your questions and paper, and, if possible, attend the convention.

KIND WORDS.

A KIND WORD FOR GRANDPA ROOT.

Grandpa Root, you did a grand work when you published that article in *Homes*, Nov. 1. A moral wave is surely sweeping over our country. God speed the day when every heart and home shall have set about "overcoming."

Corydon, Iowa, Nov. 19.

MRS. FLORA MCCAGHEY.

GLEANINGS is great reading. I have had the five volumes bound which I have taken, and they make a nice reference. Mr. A. I. Root is very interesting with his various writings, and also

very helpful. I quite envy him his winter home. We get it very cold here at times. I have 12 hives of bees, and got over 1000 lbs. of extracted honey this last season.

Minnedosa, Manitoba, Nov. 27.

W. J. WOODCOCK.

KIND WORDS FROM A MISSIONARY.

Enclosed find \$1.00. I am not keeping bees now, but I think I shall always take GLEANINGS on account of A. I. Root's department as long as we both live in this world. I have always looked to some living writer for counsel on vital themes pertaining to this life and that which is to come. Formerly it was H. Clay Trumbull in his time; now it is A. I. Root. May God bless him, and grant him many more years of usefulness in this world if it is his will. I am sure he has helped many people to live better lives.

WM. H. GILL,

Missionary to the Plutes.

Schurz, Nev., June 17.

My dear Friend:—I have a sympathy for you in your effort to spread the great news about the success of the Wright Brothers. When you first saw and foretold in GLEANINGS the success of their flying machine I sent the copy with my letter to the *Denver Post*, but the *Post* had no room for any thing but their usual trash. Keep your space in GLEANINGS for Our Homes, etc. It is the best part of GLEANINGS, and you have our gratitude for your efforts and prayers for good results.

My experience in many years' practice of medicine very decidedly confirms that alcohol is no stimulant. I very soon, after beginning practice, quit the use of it. DR. S. W. MORRISON.

Oxford, LaPlata Co., Colorado, Nov. 23.

A KIND WORD FOR OUR TEMPERANCE DEPARTMENT.

Dear Sirs:—Enclosed please find \$1.00, for which send Mr. H. Brewer GLEANINGS for one year, beginning Sept. 15. This subscription was obtained in Sunday-school, when I spoke of Mr. Root's article in Our Homes, on the Anti-saloon League, the Prohibition party, etc.

Mr. Brewer asked, "What magazine was that in?" When I told him he asked "What is the price?" I told him this also. He put his hand into his pocket and gave me \$1.00 and said, "Subscribe to this paper for me."

I must say that all that have read this article on the Anti-saloon League, etc., have greatly appreciated and enjoyed it in every sense of the word.

Forkland, Greene Co., Ala., Sept. 28.

PHILIP A. MICHELL.

Dear Mr. Root:—I used to take GLEANINGS several years ago, but I moved away to North Wilkesboro, N. C., and for some reason or other I lost sight of you. Last October I came home to spend the winter. My father takes your paper, so I hunted up all the old numbers and read up to the present; and oh the joy, pleasure, and ambition for better things you had written in the past four or five years, and may be, forgotten some of them yourself! It seemed to fill an aching void in my very being that nothing else would enter.

I am a day laborer. We all live simple lives in two, three, or four room boxed houses. I sometimes superintend the Sunday-school when there. On my three town lots (each 50x140) I want to start with bees, strawberries, and chickens, and try, by the help of your Home papers, to grow stronger every day in the Spirit of God, and more adept in the performance of his work.

I helped to vote North Carolina dry last May. The law takes effect Jan. 1. It does me good from scalp to sole when you turn the light of truth on the whisky traffic and the humbugs. May God help you to live out your century, and more, if it is his holy will; and grant that you may be able to keep up your good work with increasing power to the finish. I only wish I could push a little for you some where.

Rugby, Va., Dec. 28.

WINTON BALL.

SPECIAL NOTICES BY A. I. ROOT.

WHEAT-FOOD CRACKERS.

After grinding in hand mill, sift out the flour, dissolve sugar and salt to suit flavor; moisten the coarse particles, mix with the flour, bake dry, and you have the flavor of fresh crackers and granulated food.

R. H. DIXON.

Canandaigua, N. Y., Nov. 21.

DRY ALL AROUND.

Yes, Emperor William has climbed on the water-wagon. He will be a total abstainer for the rest of his days.

President-elect Taft announced at a recent dinner that he had taken to the water-wagon and would stay there. He did not think he should approach the tremendous responsibilities of the presidency mounted otherwise.

President Roosevelt's Christmas Liquor has been held up somewhere in South Carolina.

There is a gratifying prospect that the German Emperor, the President-elect of the United States, and the President of the United States will all have a dry Christmas.—*Charlotte Observer*.

Before buying your Comb Foundation, or disposing of your beeswax, be sure to get our prices on wax and foundation, or our prices on working wax into foundation.

We are also in a position to quote you prices on hives, sections, and all other supplies. We give **LIBERAL DISCOUNTS** during the month of February.

Remember that

DADANT'S FOUNDATION

is the very best that money can buy.

We always guarantee satisfaction in every way.

LANGSTROTH ON THE HONEY-BEE (new edition), by mail, \$1.20.

Send for our prices on Extracted, White-clover, and Amber Fall Honey.

DADANT & SONS, . . HAMILTON, ILL.

AGENTS WANTED

IN CENTRAL AND MIDDLE WESTERN STATES
FOR THE FAMOUS

"FALCON" BEE-SUPPLIES

We need a few more agents who can carry a complete line of "FALCON" Supplies in Central and Middle Western States, to save time and freight to our ever-increasing trade in that territory. Our goods lead as regards workmanship and material. A trade is easily built up and retained with our superior "FALCON" DOVETAILED and AIR-SPACED HIVES and other Bee-supplies. If in a position to handle a full line of our goods, write for terms, stating experience.

BEESWAX WANTED. - 32 cents in supplies, or 30 cents in cash, delivered.

Bee-keepers: Write for catalog and nearest agent.
February discount, 3 per cent; March, 2 per cent.

W. T. FALCONER MFG. CO., JAMESTOWN, N. Y.



Three-pound White Orpington Rooster. Ten Weeks Old, Raised by the Philo System.

\$200⁰⁰

In Six Months From 20 Hens

To the average poultryman that would seem impossible, and when we tell you that we have actually done a \$500 poultry business with 20 hens on a corner in the city garden, 30 feet wide by 40 feet long, we are simply stating facts. It will not be possible to get such returns by any one of the systems of poultry-keeping recommended and practiced by the American people, still it is an easy matter when the new **Philo System** is adopted.

The Philo System is unlike all other ways of keeping poultry, and in many respects is just the reverse, accomplishing things in poultry work that have always been considered impossible, and getting unheard of results that are hard to believe without seeing; however, the facts remain the same, and we can prove to you every word of the above statement.

The New System Covers all Branches of the Work Necessary for Success

from selecting the breeders to marketing the product. It tells how to get eggs that will hatch, how to hatch nearly every egg, and how to raise nearly all the chicks hatched. It gives complete plans in detail how to make every thing necessary to run the business and at less than half the cost required to handle the poultry business in any other manner. There is nothing complicated about the work, and any man or woman that can handle a saw and hammer can do the work.

TWO-POUND BROILERS IN EIGHT WEEKS

are raised in space of less than a square foot to the broiler, without any loss, and the broilers are of the very best quality, bringing here three cents per pound above the highest market price.

Our Six-Months-Old Pullets are Laying at the Rate of 24 Eggs Each Per Month

in a space of two square feet for each bird. No green-cut bone of any description is fed, and the food used is inexpensive as compared with food others are using.

Our new book, the Philo System of Progressive Poultry Keeping, gives full particulars regarding these wonderful discoveries with simple, easy-to-understand directions that are right to the point, and 15 pages of illustrations showing all branches of the work from start to finish.

Don't Let the Chicks Die in the Shell

One of our secrets of success is to save all the chickens that are fully developed at hatching time, whether they can crack the shell or not. It's a simple trick and believed to be the secret of the Ancient Egyptians and Chinese, which enabled them to sell the chicks at 10 cents a dozen.

Chicken Feed at 15 Cents a Bushel

Our book tells how to make the best green food with but little trouble and have a good supply any day in the year, winter or summer. It is just as impossible to get a large egg yield without green food as it is to keep a cow without hay or fodder.

Our New Brooder Saves Two Cents on Each Chicken

No lamp required. No danger of chilling, overheating, or burning up the chickens as with brooders using lamps or any kind of fire. They also keep all the lice off the chickens automatically, or kill any that may be on when placed in the brooder. Our book gives full plans and the right to make and use them. One can be easily made in an hour at a cost of 25 to 50 cents.

Send \$1 direct to the publisher, and a copy of the latest revised edition of the book will be sent you by return mail.

E. R. PHILO, Publisher

23 THIRD STREET

ELMIRA, N. Y.

A Few Testimonials

VALLEY FALLS, N. Y., Sept. 5, 1907.

It was my privilege to spend a week in Elmira during August, during which time I saw the practical working of the Philo System of Keeping Poultry, and was surprised at the results accomplished in a small corner of a city yard. "Seeing is believing," they say; and if I had not seen, it would have been hard to believe that such results could have followed so small an outlay of space, time, and money. (Rev.) W. W. COX.

Oct. 22, 1908.

P. S.—A year's observation, and some experience of my own, confirm me in what I wrote Sept. 5, 1907. The System has been tried so long and by so many, that there can be no doubt as to its worth and adaptability. It is especially valuable to parties having but a small place for chickens; seven feet square is plenty for a flock of seven. (Rev.) W. W. COX.

RANSOMVILLE, N. Y., Dec. 5, 1907.

Dear Sir:—Last spring we purchased your book entitled the "Philo System" and used your heatless brooders last spring and summer. The same has been a great help to us in raising the chix in the health and mortality, the chix being stronger and healthier than those raised in the brooders with supplied heat. We believe this brooder is the best thing out yet for raising chix successfully. We put 25,000 chix through your heatless brooders this last season, and expect to use it more completely this coming season. We have had some of the most noted poultrymen from all over the U. S. here, also a large number of visitors who come daily to our plant, and without any exception they pronounce our stock the finest and healthiest they have seen anywhere this year.

Respectfully yours, W. R. CURTISS & Co.

SKANEATELES, N. Y., May 5, 1908.

One article of the Philo System entitled "A Trick of the Trade" has been worth three times the amount the book cost. I saved on my last hatch fifty chicks which are doing nicely. W. B. REASE.

HOT-BEDS BRING PROFITS

Good Money in Growing Garden Truck UNDER GLASS — Ahead of the Rest!

Book giving Secrets of Success with Hot-Beds FREE

We want to send a free copy of our valuable new book on "Hot-Beds; Their Uses, Cost, and Construction," to every farmer, fruit-grower, market-gardener, florist—everybody who has a garden, whether large or small. We want to tell you about the remarkable improvements we have made in the design and construction of Hot-Bed Sash, and all about our ready-made Frames and Sub-Frames, which save time, trouble, and expense.



Hot-Bed Sash
Size 3x6 ft. \$169
1 1/2 in. thick
Glazed with
6-in. Glass
Dealers' price 3.50

Our Prices the Lowest in America!

We manufacture Hot-Bed Sash and equipment in our great Millwork Plant in such enormous quantities that our prices are the lowest in America. To-day, Gordon-Van Tine Hot-Bed Sash are admittedly the best on the market. Under the stimulus of our low prices, the use of Hot-Beds has increased tremendously. The large users save a very considerable sum by buying direct from us—and the man with a little garden patch on a city lot saves in the same proportion when he buys a couple of our Sash.

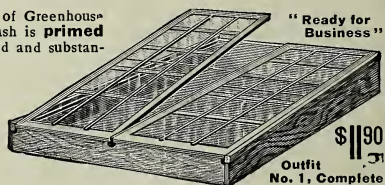
HAVE FRESH VEGETABLES FROM JANUARY TO JANUARY

The use of Hot-Beds extends the growing season throughout the entire year. The owner of a Hot-Bed gets early vegetables long before the non-user, and no investment pays bigger returns in both profit and pleasure.

Strongly Made Red Cypress Sash

All our Hot-Bed Sash are made of clear, selected Red Cypress. Joints are **blind-mortised, double-shouldered**, fitted snugly, and moisture-proof. No open joints! No chance for moisture to enter and play havoc with the sash! A sash that won't twist, spring in the middle, pull loose, crack the glass, or loosen the putty!

We use plenty of points and the finest quality of Greenhouse Putty. And every Gordon-Van Tine Hot-Bed Sash is **primed in pure Raw Linseed Oil**. They are as solid and substantial as careful workmanship and best materials can make them. They are the **Sash that Last!** We sell these high-grade, scientifically constructed Hot-Bed Sash—**glazed complete**—for less money than retail dealers ask for common open sash.



"Ready for Business"
\$11.90
Outfit No. 1, Complete

See These Cut Prices on Hot-Bed Sash!

Size 3x6 feet, 1 1/2-inch, 6x10 Glass	\$1.69
Size 3x6 feet, 1 1/2-inch, 6x10 Glass	2.08
Size 3x6 feet, 1 1/2-inch, 10x14 Glass	1.75
Size 3x6 feet, 1 1/2-inch, 10x14 Glass	2.14
Size 3x6 feet, 1 1/2-inch, with Bar, 10x14 Glass	1.87
Size 3x6 feet, 1 1/2-inch, with Bar, 10x14 Glass	2.46

Glazed with Double-strength Glass, add 20c net to above prices.

Glass! Glass! Glass!

We save you 300 per cent. Write for prices. Here is an example of the saving:—

Our Price, on 8x10-ss., **3c** per light.
Dealers', on 8x10-ss., **15c** per light.

START YOUR HOT-BEDS NOW

Write quick for the FREE BOOK on "Secrets of Success with Hot-Beds." We have 20,000 Hot-Bed Sash in stock, and can fill orders promptly. Now is the time to start Hot-Beds.

Buy a Complete Hot-Bed Outfit

Including Sash, Frames, and Sub-Frames

Gordon-Van Tine Hot-Bed Outfits consist of our regular Hot-Bed Sash and Complete Frames (for above ground) and Sub-Frames (for pit). Frames are of cypress. Each part cut to exact size. Angle irons with holes punched for screws. Note the low prices:

Outfit No. 1 2 glazed Hot-Bed Sash, 3x6 feet, 1 1/2, 6-inch glass; 1 Cypress Frame for 2 Sash; 1 Sub-Frame, all carefully crated for shipment **\$11.90**

Outfit No. 2 Same as No. 1, except glazed with 10-inch Glass **\$12.00**

For Double-strength Glass add 40c net to price of each outfit.
Hot-Bed Frames, \$5.70 each. Sub-Frames, \$4.25 each.

GORDON-VAN TINE CO., 1467 Case St. **DAVENPORT, IA.**